eBOX640-860-FL Series
Embedded System
User's Manual

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Safety Precautions

Before getting started, please read the following important safety precautions.

1. The eBOX640-860-FL does not come equipped with an operating system. An operating system must be loaded first before installing any software into the computer.
2. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
3. Disconnect the power cord from the eBOX640-860-FL before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the eBOX640-860-FL is properly grounded.
4. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
5. Turn OFF the system power before cleaning. Clean the system using a cloth only. Do not spray any liquid cleaner directly onto the screen.
6. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20℃ or above 80℃. It may damage the equipment.
7. Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
   - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
   - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

Classification

1. Degree of production against electric shock : not classified
2. Degree of protection against the ingress of water : IP30
3. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
4. Mode of operation : Continuous

General Cleaning Tips

You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

When you need to clean the device, please rub it with a piece of dry cloth.

1. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
2. Turn the system off before you start to clean up the component or computer.
3. Never drop the components inside the computer or get circuit board damp or wet.
4. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
5. Try not to put any food, drink or cigarette around the computer.

Cleaning Tools:

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning.

- Cloth: A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- Water or rubbing alcohol: You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- Vacuum cleaner: Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- Cotton swabs: Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- Foam swabs: Whenever possible it is better to use lint free swabs such as foam swabs.

Note: ***We strongly recommended that you should shut down the system before you start to clean any single components.***

Please follow the steps below:

1. Close all application programs
2. Close operating software
3. Turn off power switch
4. Remove all device
5. Pull out power cable

Scrap Computer Recycling

If the computer equipment's need the maintenance or are beyond repair, we strongly recommended that you should inform your Axiomtek distributor as soon as possible for the suitable solution. For the computers that are no longer useful or no longer working well, please contact your Axiomtek distributor for recycling and we will make the proper arrangement.

Trademarks Acknowledgments

Table of Contents

MEMO:

CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the eBOX640-860-FL. The Chapter 1 includes the following sections:

- General Description
- System Specification
- Dimensions
- I/O Outlets
- Packing List

1.1 General Description

The eBOX640-860-FL is an embedded system that supports onboard dual core Intel® rPGA988 socket G2 for 2nd Generation Intel® Core™ i3/ i5/ i7/ Celeron® processor to provide Windows 7, Windows Vista, Windows XPE, Linux, suitable for the most endurable operation. It features fan less design with full feature I/O, two 204-pin unbuffered SODIMM socket for dual channel DDR3-1066/1333 MHz memory max. up to 16GB, and enhanced system dependability by built-in Watchdog Timer.

- Features
  1. Intel® QM67 PCH
  2. Support Intel® rPGA988 socket G2 for 2nd Generation Intel® Core™ i3/ i5/ i7/ Celeron® processor
  3. Maximum to 16GB DDR3 1066/1333 MHz memory
  4. Compact design
  5. Supports 4 RS-232 Ports
  6. Supports 6 USB 2.0 ports
  7. Supports 2 10/100/1000Mbps Ethernet port
  8. Dual 2.5" SATA HDD drive bays
  9. One CFast™
  10. Watchdog timer
  11. Wide Range DC-in support. (DC 10~30V)
  12. Din-rail mount (optional)
  13. Wall mount (optional)
  14. VESA mount (optional)
  15. Express Mini Card Module (optional)
  16. Antenna (optional)
  17. 19V 90W AC Power Adapter (optional)

- Reliable and Stable Design
  The eBOX640-860-FL adopts the advanced cooling system and supporting the CFast™, which makes it especially suitable for vibration environments, best for industrial automation, digital signage and gaming application.

- Embedded O.S. Supported
  The eBOX640-860-FL not only supports Windows 7, Windows Vista, but also supports embedded OS, such as WES, Win7 Embedded and Linux .

- Various Storage devices supported
  For storage device, the eBOX640-860-FL supports two 2.5" SATA storage drive bay, and one CFast™ slot.

1.2 System Specifications

1.2.1 CPU

- **CPU**

  Support Intel® rPGA988 socket G2 for 2nd Generation Intel® Core™ i3/ i5/ i7/ Celeron® processor

- **BIOS**

  AMI 16Mb SPI

- **System Memory**

  Maximum to 16GB DDR3 memory
  Two 204-pin SODIMM support up to 16GB dual channel DDR3 1066/1333MHz sockets

1.2.2 I/O System

- **Four 9-pin D-Sub male connectors, COM1~COM4 for RS-232**
- **One 15-pin D-Sub female connector for VGA**
- **One DisplayPort**
- **One HDMI Port**
  - Allow configuration: VGA+ DisplayPort / VGA + HDMI / DisplayPort + HDMI
- **One Audio connector**
  - Mic-IN, Line-OUT
- **Two RJ-45 connector for 10/100/1000Base-T Ethernet**
- **Six USB 2.0 connectors**
- **One SMA type connector for antenna**
- **One phoenix type DC-in connector**
- **One lockable DC Jack connector (Optional for AC version)**

1.2.3 Storage

- **Two 2.5" SATA HDD/SSD drive bays**
- **One CFast™ slot**

1.2.4 System Specification

■ **Watchdog Timer**

Reset supported; 255 levels, 1~255 sec.

■ **Power Supply**

DC: 10~30V wide range DC input

AC: 19V 90W AC/DC adapter

■ **Operation Temperature**

-5℃ ~ 50℃ (23 ºF ~ 122ºF), with W.T. HDD/SSD

NOTE: The TDP of the processor should under 35W to prevent from over- heat

■ **Storage Temperature**

-20℃ ~ 80℃ (-4 ºF ~ 176ºF)

■ **Humidity**

10% ~ 90% (non-condensation)

■ **Vibration Endurance**

1Grm w/ HDD & SSD & CFast (5-500Hz, X, Y, Z directions)

■ **Weight**

3.8 kg (8.37 lb) without package

4.6 kg (10.14 lb) with package

■ **Dimensions**

192mm(7.56") (W) x 230mm(9.05") (D) x 100mm(3.93") (H)

1.2.4 Driver CD Content

- **Driver**
  - Step 1_CHIP
  - Step 2_VGA
  - Step 3_ LAN
  - Step 4_ AUDIO
  - Step 5_RAID
  - Step 6_TPM
  - Step 7_ME
- **Manual**
  - User Manual
  - Quick Manual

NOTE: After installed Intel Graphic/VGA Driver, the output display will become "Clone Display". User can adjust the display device and resolution regarding to user's requirement.

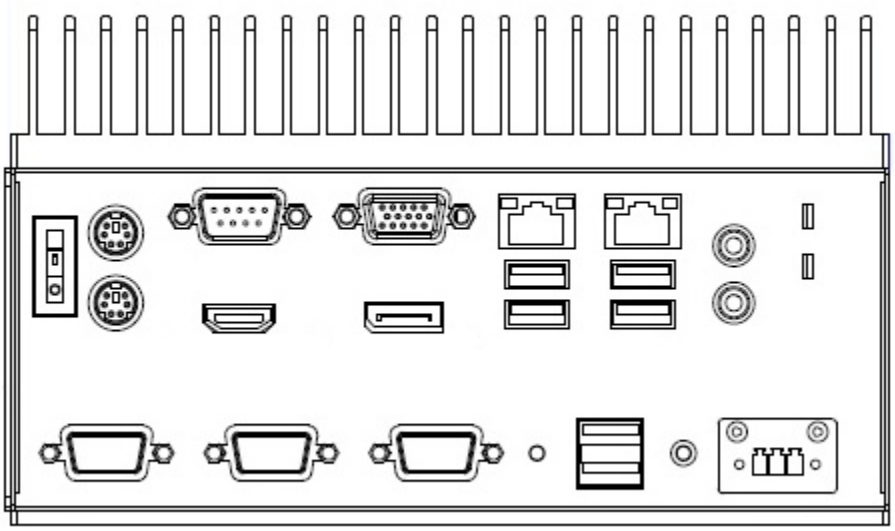
NOTE: All specifications and images are subject to change without notice.

1.3 Dimensions

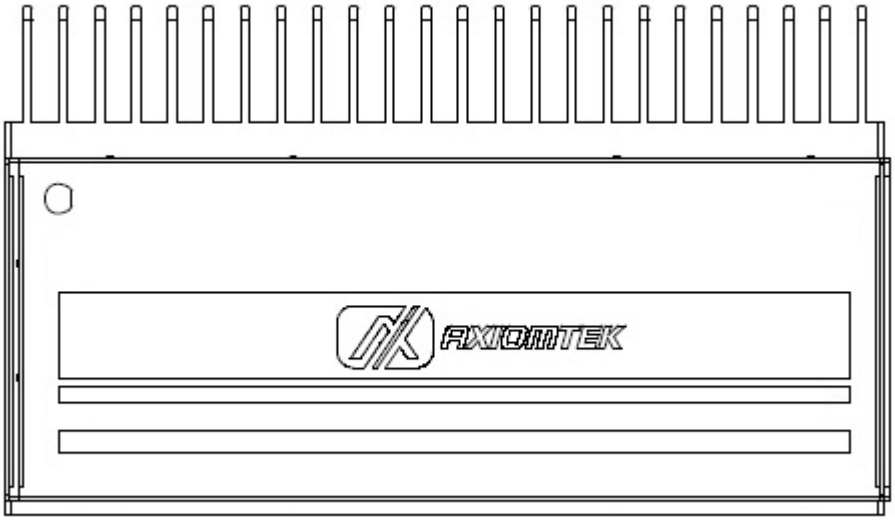
The following diagrams show you dimensions and outlines of the eBOX640-860-FL.

1.3.1 System Dimension

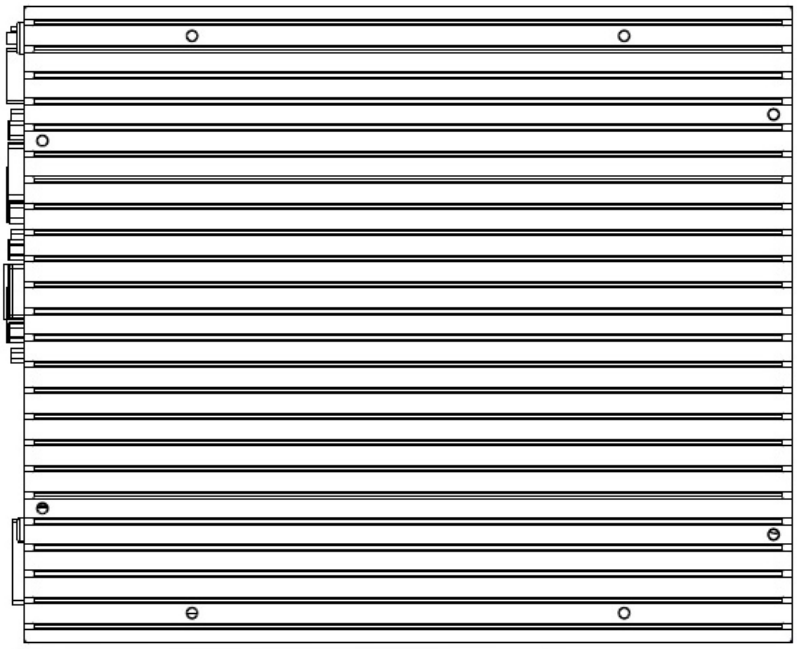
Front View



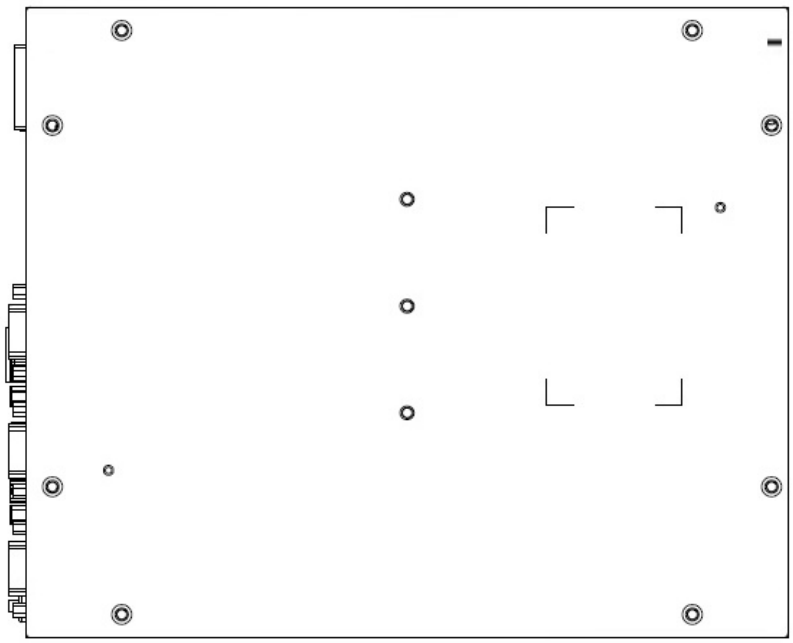
Rear View



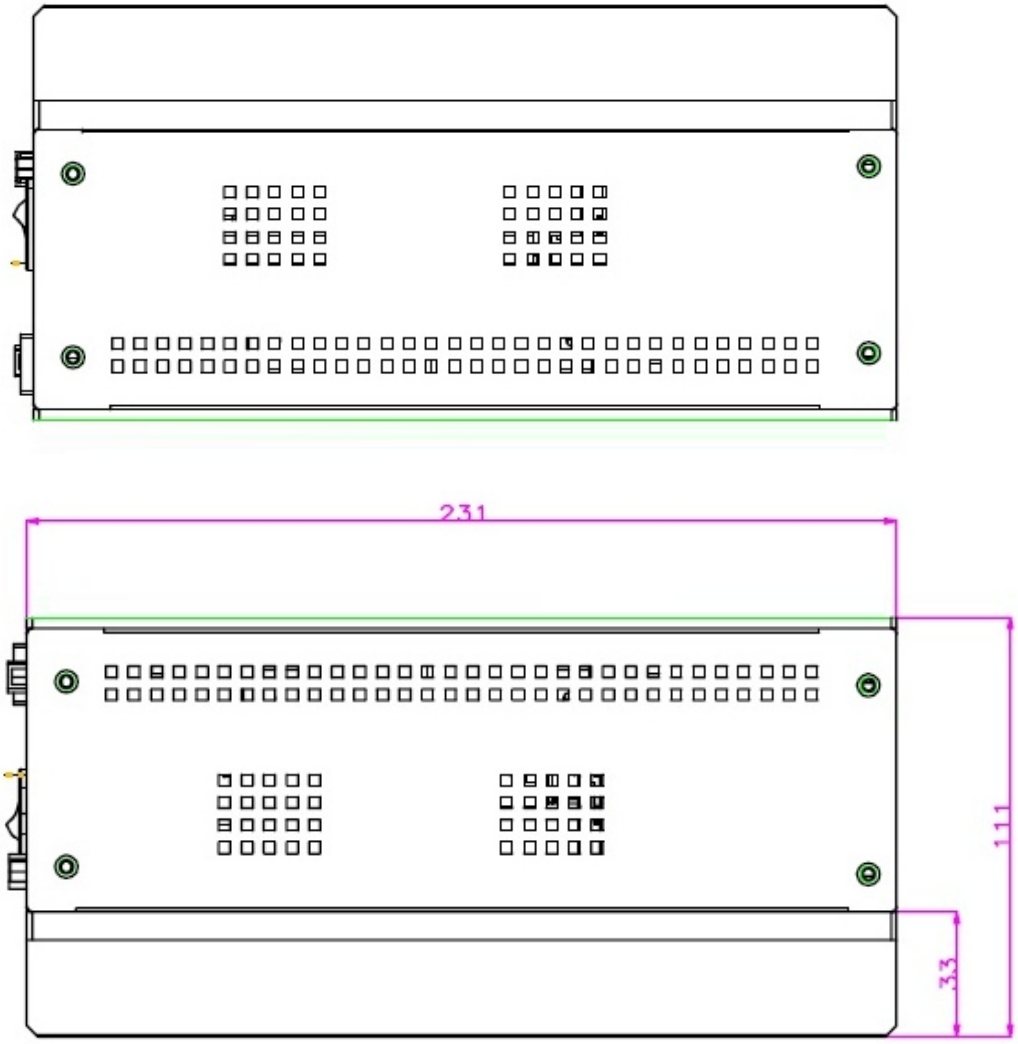
Top View



Bottom View

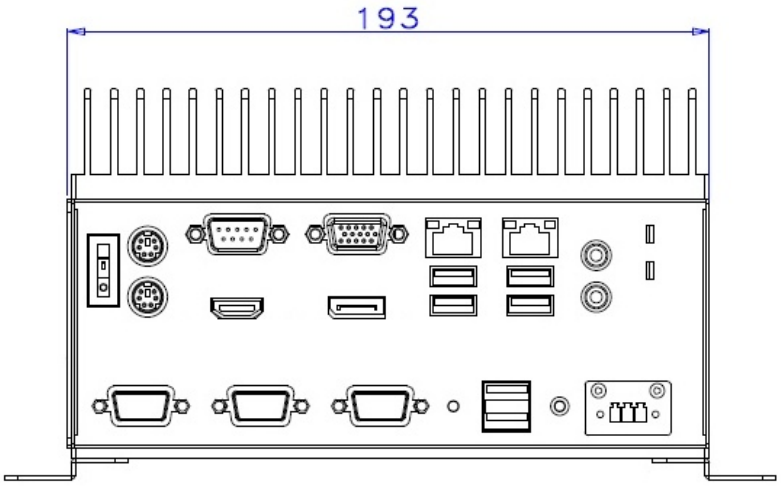


Side View

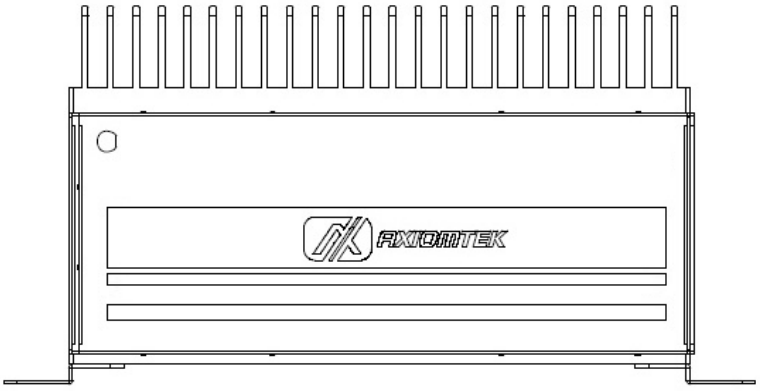


1.3.2 Wall mount Bracket Dimension

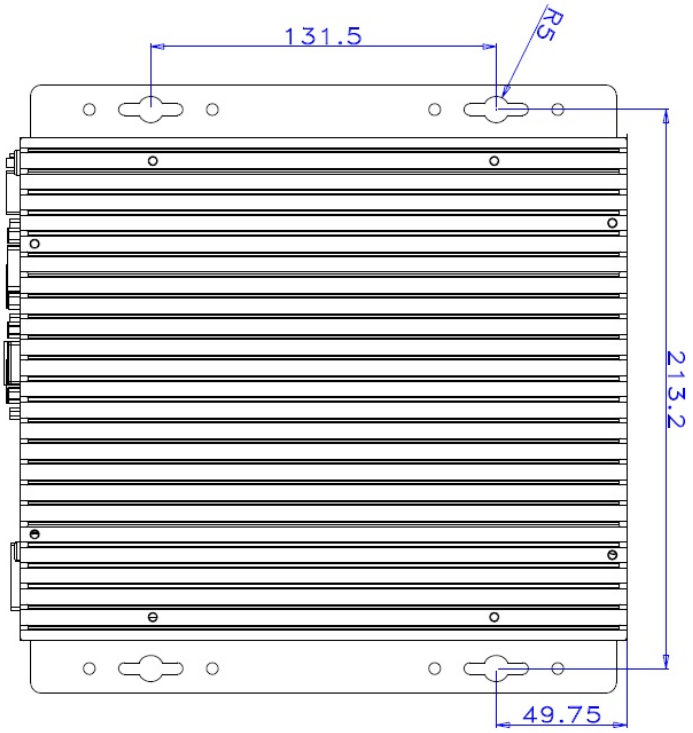
Front View



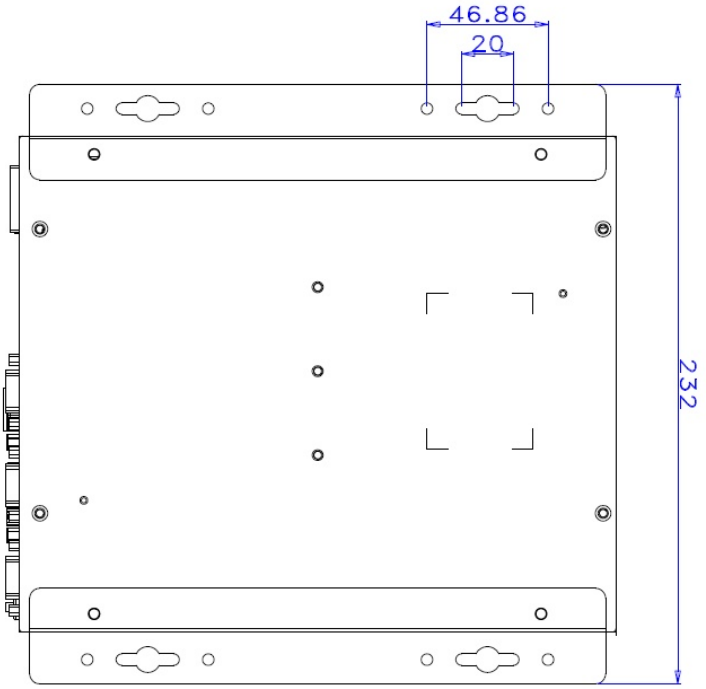
Rear View



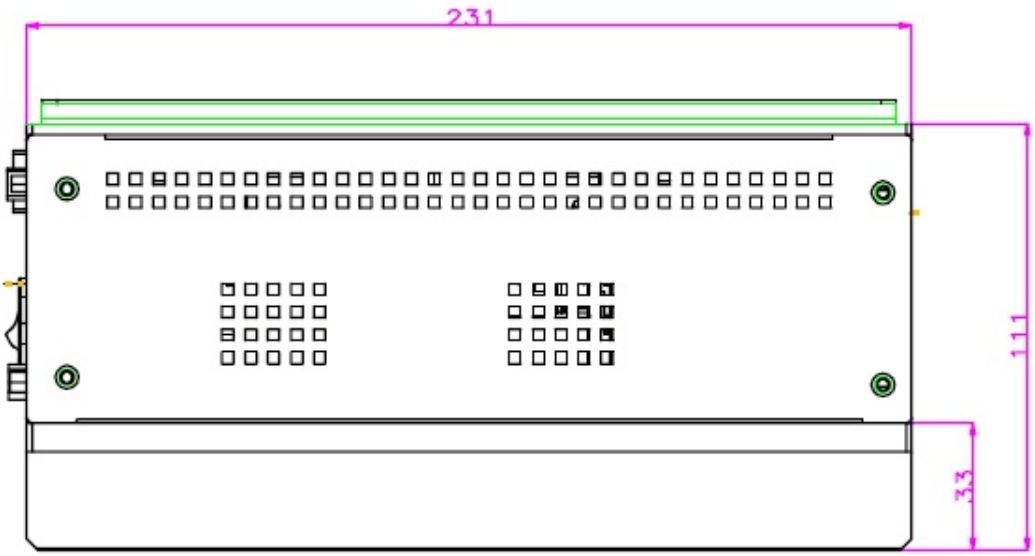
Top View

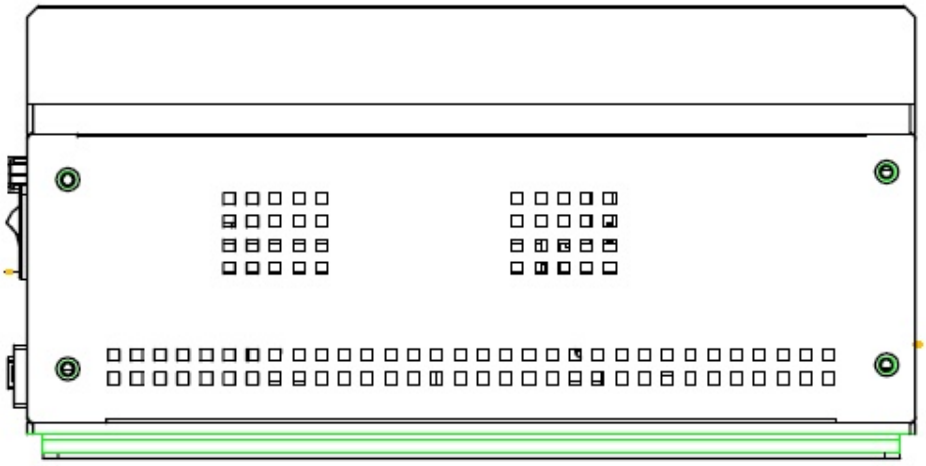


Bottom View



Side View



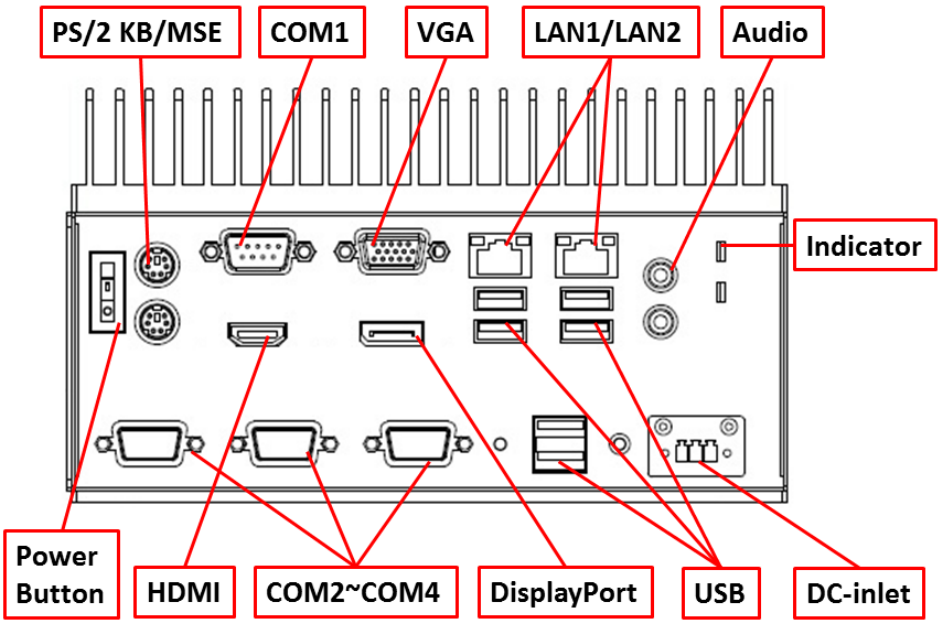


1.4 Dimensions

The following figures show you I/O outlets on front view of the eBOX640-860-FL.

1.4.1 I/O (Front) view

1.4.2 I/O (Front) view Drawing



1.5 Packing List

The package bundled with your eBOX640-860-FL should contain the following items:

- eBOX640-860-FL System Unit x 1
- eBOX640-860-FL Quick Manual x 1
- CD x 1 (For Driver and User's Manual)
- Screws pack x1
- Foot pad x4
- DC-in Phoenix Connector x1
- Thermal Grease x1
- Wall-mount Brackets (optional)
- Din-rail Bracket (optional)
- 2.5" SATA HDD (optional)
- CFast™ card (optional)
- DDR3 SODIMM (optional)
- 19V 90W AC Power Adapter (optional)
- Power cord (optional)
- Express Mini Card (optional)
- Antenna (optional)

MEMO:

CHAPTER 2
HARDWARE INSTALLATION

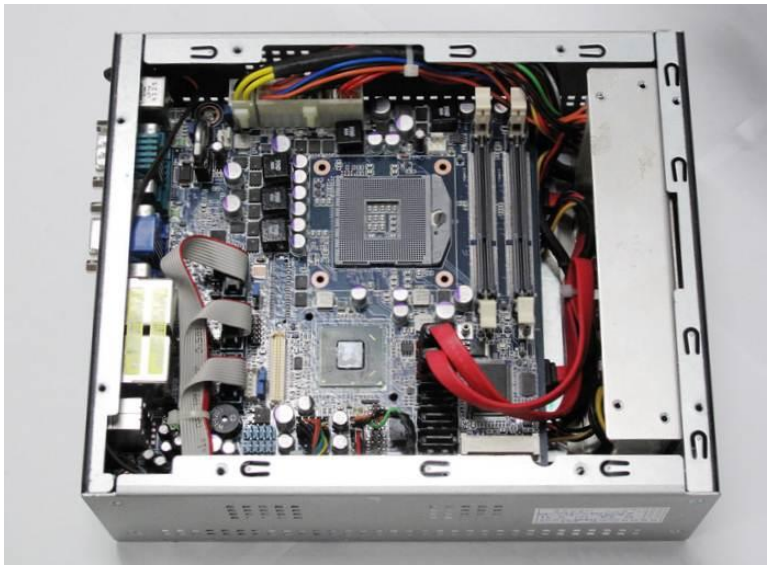
The eBOX640-860-FL is convenient for your various hardware configurations, such as rPGA988 socket processor, 204-pin DDR3 Memory Module, dual 2.5" HDD (Hard Disk Drive) or 2.5" SSD (Solid State Drive) and CFast™ card. The chapter 2 will show you how to install the hardware.

2.1 Installing the Memory Module

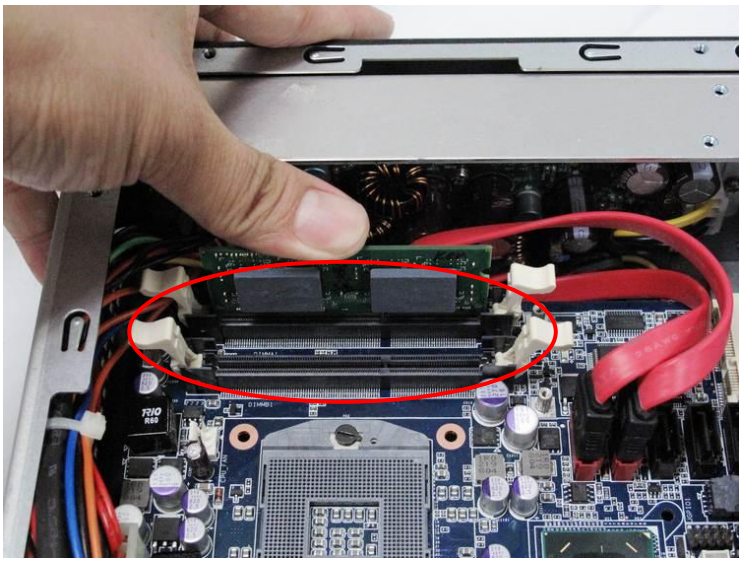
Step 1 Turn off the system, and unplug the power cord.

Step 2 Locate screws at the top cover, loosen screws.

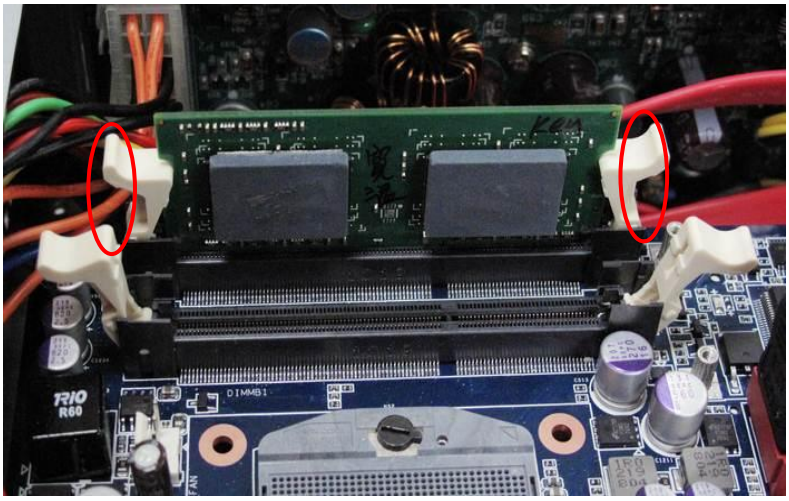
Step 3 Remove the top cover



Step 4 Locate the memory module, insert the gold colored contact into the socket.



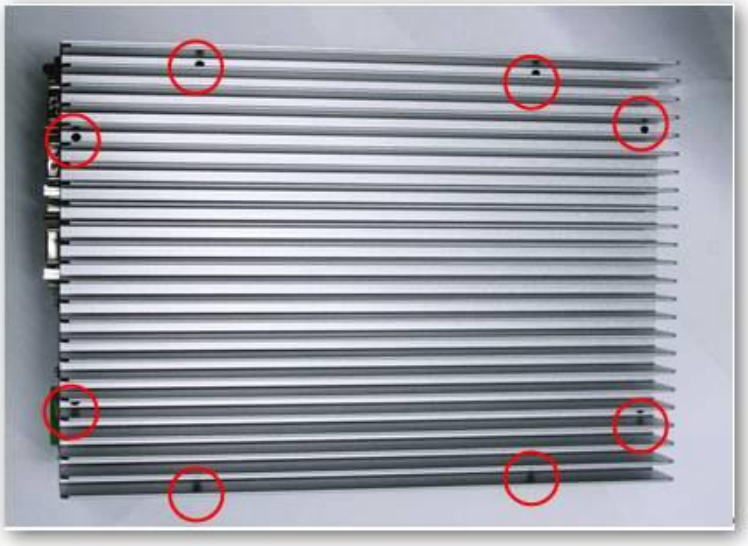
Step 5 Push the module down, until it is firmly seated by locking two latches.



Step 6 Close the cover to the chassis, and fasten all screws.

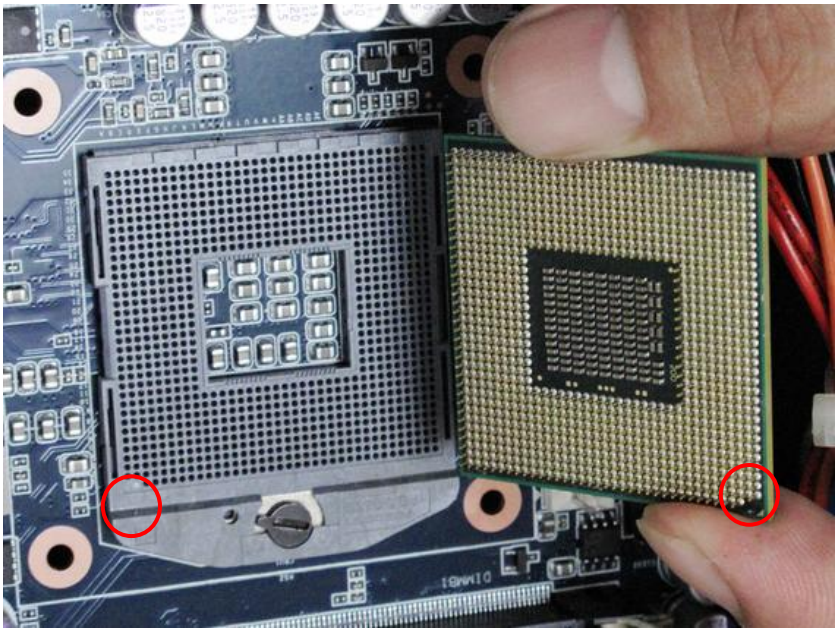
2.2 Installing the CPU

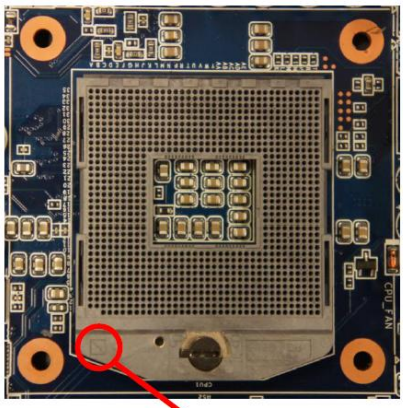
Step 1 Turn off the system, and unplug the power cord.
Step 2 Locate screws at the top cover, loosen screws.



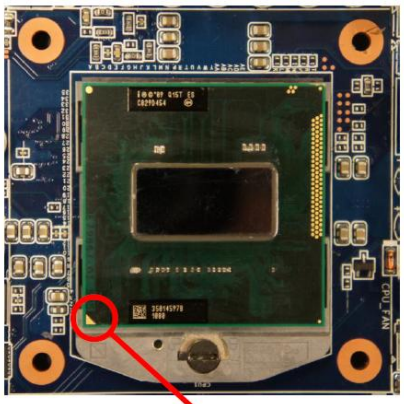
Step 3 Remove the top cover

Step 4 Before you install processor, please DO check the fool-proof pin.



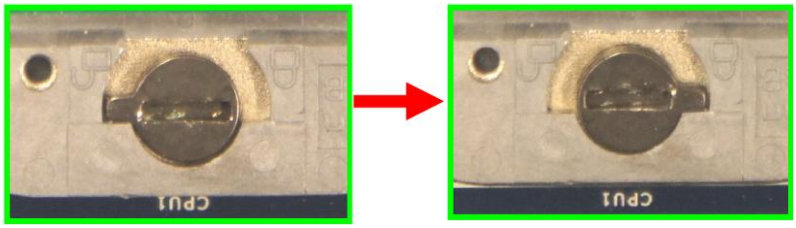


CPU Socket triangle

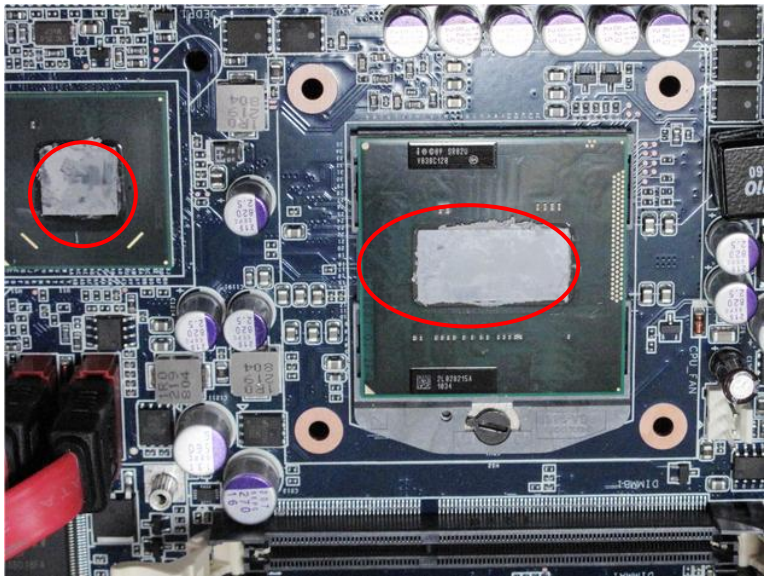


Gold triangle

Step 5 Turn the CPU lock clockwise to lock CPU



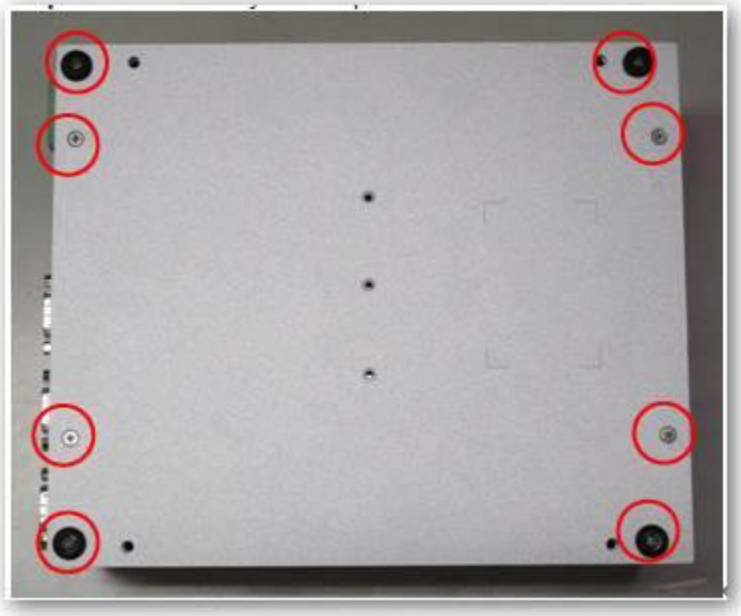
Step 6 Install the processor, and then daub a layer of the thermal grease on the die of the processor and the chipset



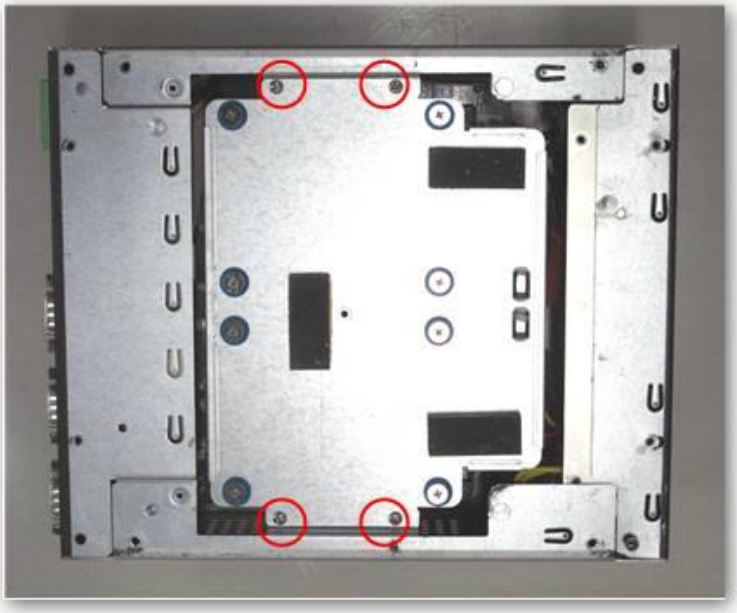
Step 7 Close the cover to the chassis, and fasten all screws.

2.3 Installing the SATA HDD

Step 1 Turn off the system, and unplug the power cord.
Step 2 Turn the system upside down to locate screws at the Bottom, loosen screws.

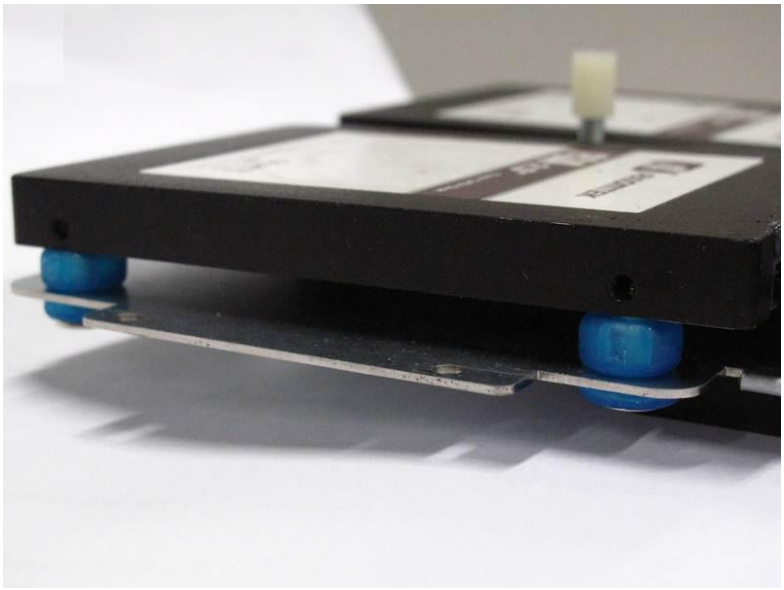


Step 3 Remove the bottom cover and Loosen screws of HDD bracket



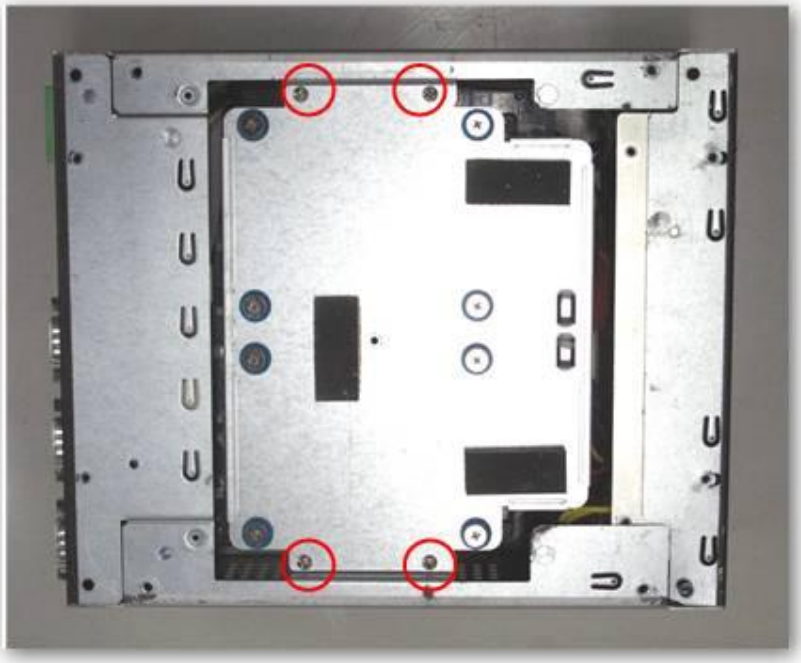
Step 5 Remove the HDD bracket

Step 6 Assembly the HDD bracket together with the SATA HDD

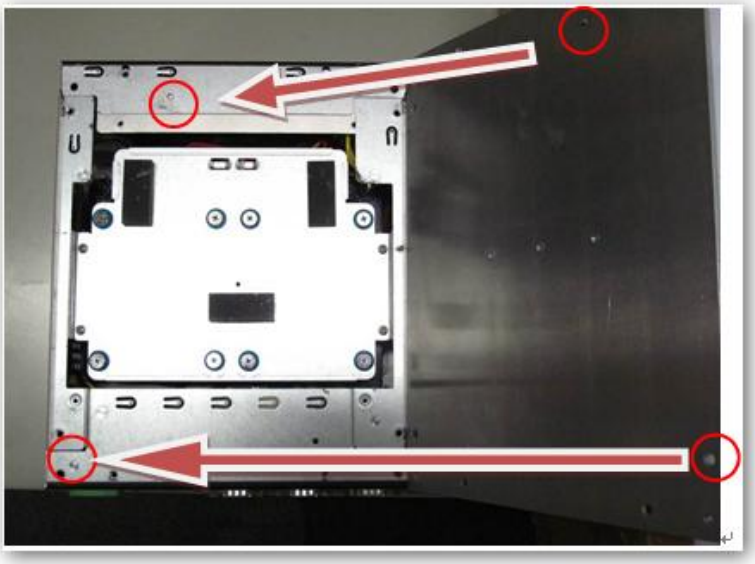


Step 7 Connect SATA cable and SATA power cable with the SATA HDD

Step 8 Assembly the HDD kit back to system, and fasten screws of HDD bracket



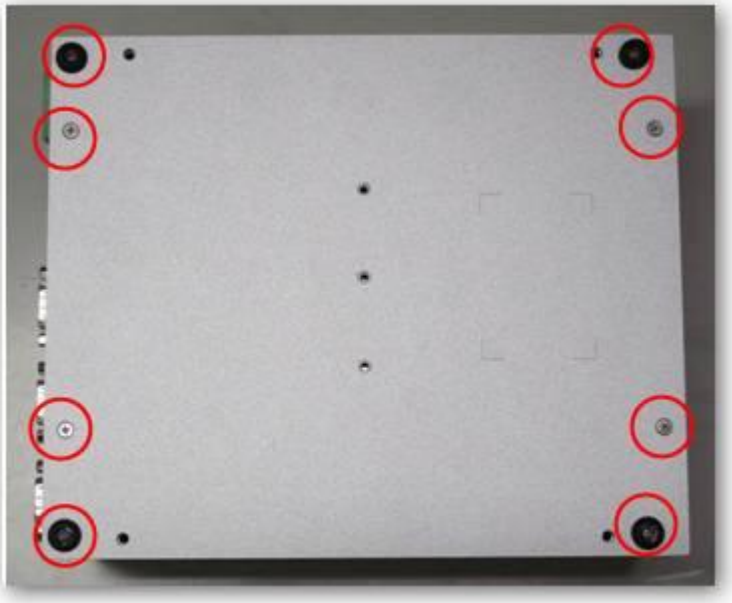
Step 9 Before assemble the button cover of the system; please check the fool-proof pin of the system.



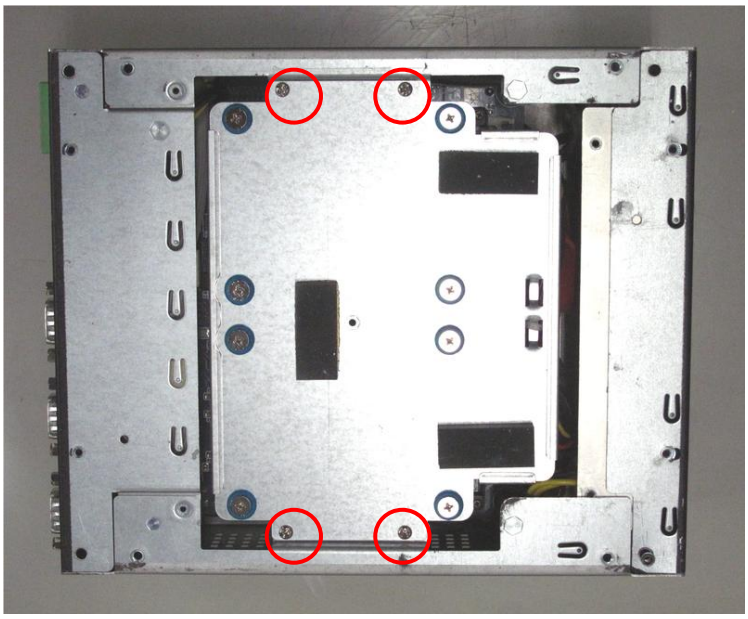
Step 10 Close the cover to the chassis, and fasten all screws.

2.4 Installing the CFast

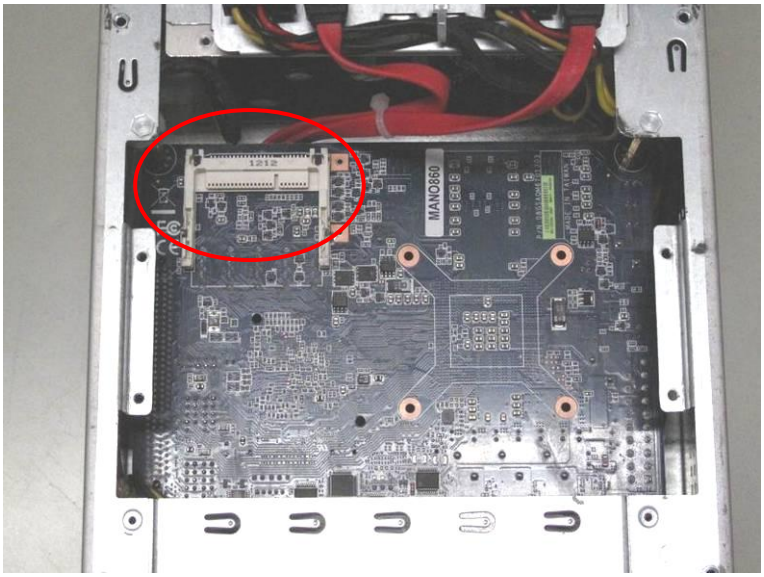
Step 1 Turn off the system, and unplug the power cord.
Step 2 Turn the system upside down to locate screws at the Bottom, loosen screws.



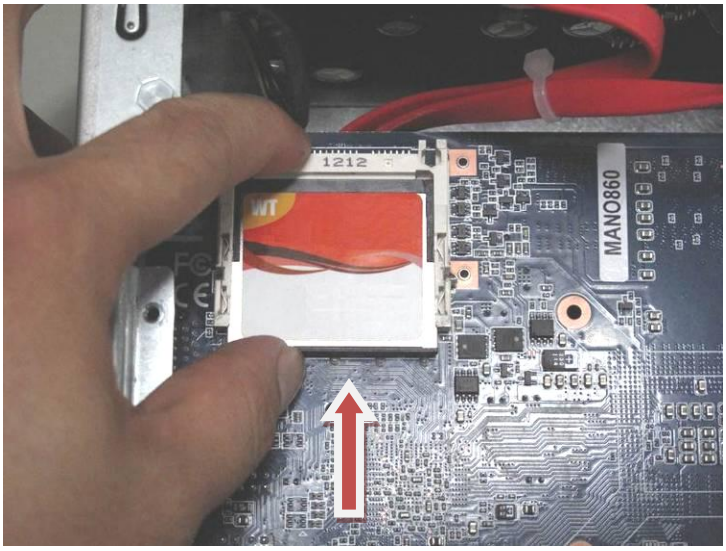
Step 3 Remove the bottom cover and Loosen screws of HDD bracket



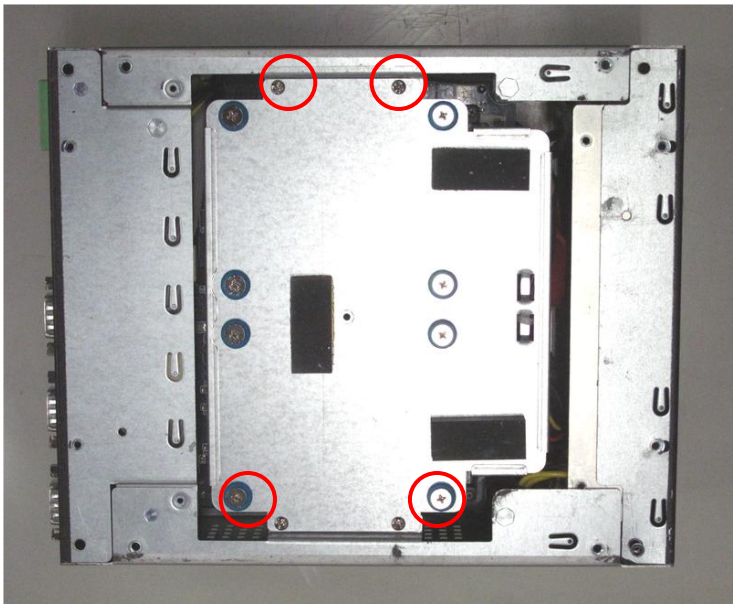
Step 5 Remove the HDD bracket, and locate the CFast card slot.



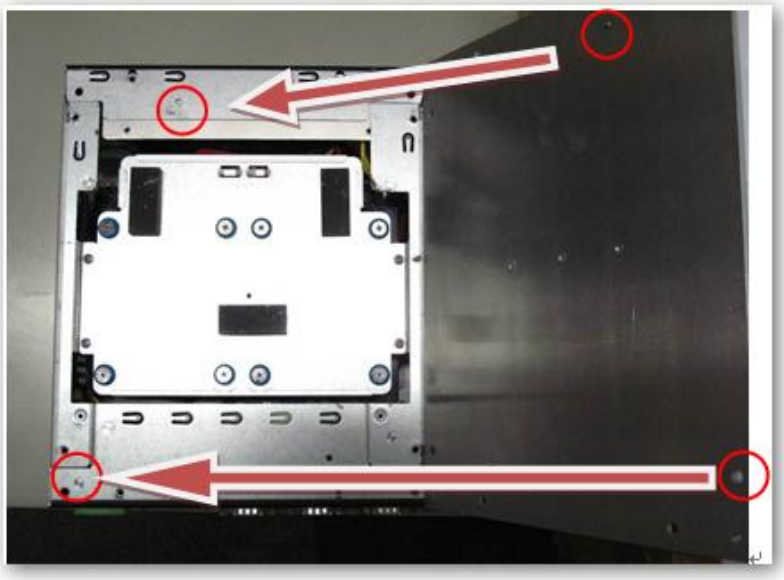
Step 6 Locate CFast slot and install the CFast card into CFast slot



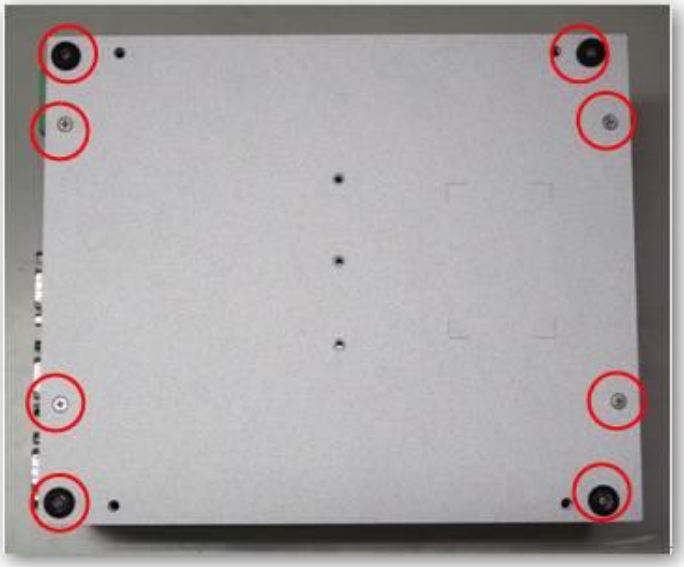
Step 7 Assembly the HDD kit back to system, and fasten screws of HDD bracket



Step 8 Before assemble the button cover of the system; please check the fool-proof pin of the system.



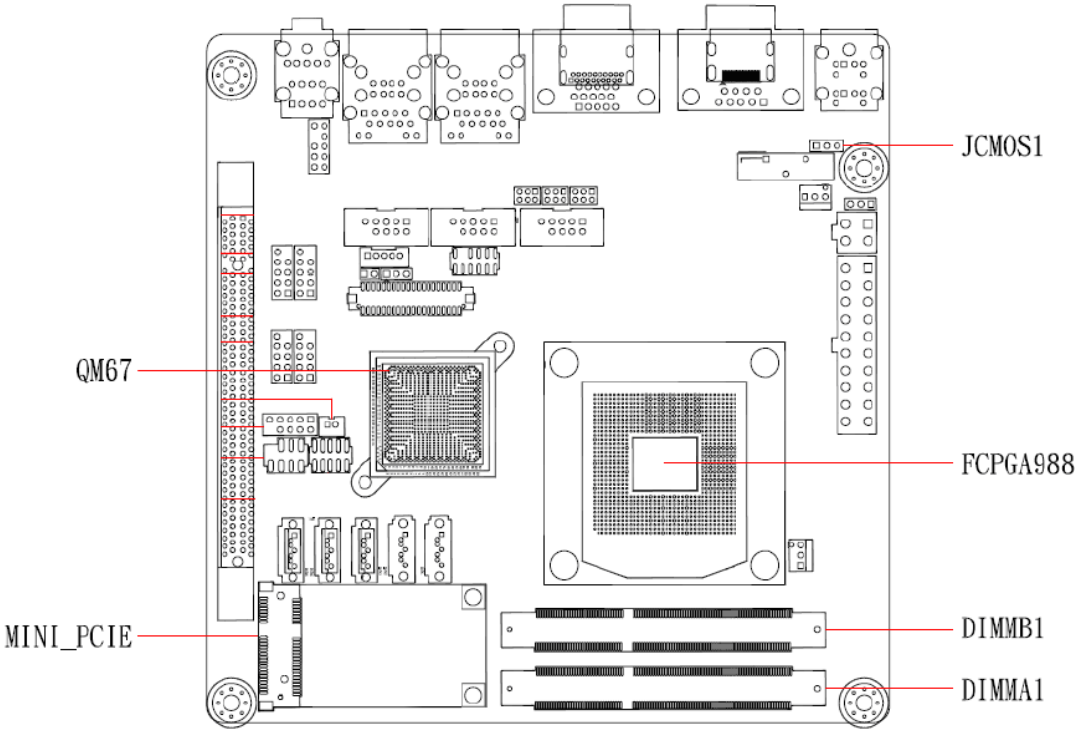
Step 9 Close the cover to the chassis, and fasten all screws.



CHAPTER 3
JUMPER SETTING & CONNECTOR

Proper jumper settings configure the **eBOX640-860-FL** to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

3.1 SBC layout



TOP Side

NOTE: We strongly recommended that you should not modify any unmentioned jumper setting without Axiomtek FAE's instruction. Any modification without instruction might cause system to become damage.

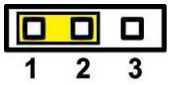
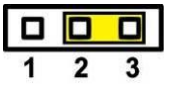
3.2 Jumper Setting Summary

Proper jumper settings configure the eBOX640-860-FL to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings.

Jumper	Function / Default Setting	Jumper Setting
JCMOS1	Normal Operation/Clear CMOS setting Default: Normal Operation	Short 1-2

3.2.1 CMOS Clear Jumper (JCMOS1)

You may need to use this jumper is to clear the CMOS memory if incorrect settings in the Setup Utility.

Description	Function	Jumper Setting
CMOS Clear	Normal (Default)	
	Clear CMOS	

***NOTE*: How to setup Jumpers**

The illustration shows how to set up jumpers. When the jumper cap is placed on pins, the jumper is "close", if not, that means the jumper is "open".

[Open] [Closed] [Pin1-2 Closed]

***NOTE*: How to clear CMOS**

1. Turn off the system and remove power cable.
2. Locate the JCMOS1.
3. Set the jumper to "Pin 2-3 close".
4. Wait for five seconds.
5. Set the jumper back to "Pin 1-2 close".
6. Re-connect the power cable, turn on the system.
7. Reset / re-configure your CMOS setting.

3.3 Connectors

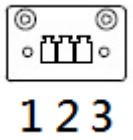
Connectors connect the system with other parts/devices. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected. Below summary table shows you all connectors on the eBOX640-860-FL.

External Connectors	Section
Phoenix DC-in Connector	3.3.1
DC-in Jack Power Connector	3.3.2
PS2 Keyboard/Moues Connector	3.3.3
Serial Port Connector	3.3.4
Display Port Connector	3.3.5
VGA Connector	3.3.6
HDMI Connector	3.3.7
LAN Connector(LAN1,LAN2)	3.3.8
USB Connector	3.3.9
Audio Connector	3.3.10
ATX Power On/Off Button	3.3.11
Internal Connectors	**Section**
SATA Connector	3.3.12
SATA Power Connector	3.3.13
CFast™ Socket	3.3.14
DDR3 SO-DIMM	3.3.15
Express Mini Card Slot	3.3.16

3.3.1 Phoenix DC-in Connector

The system supports a wide range Phoenix DC-in connector for system power input. (Only for DC mode)

Pin	Signal
1	DC+
2	GND
3	DC-



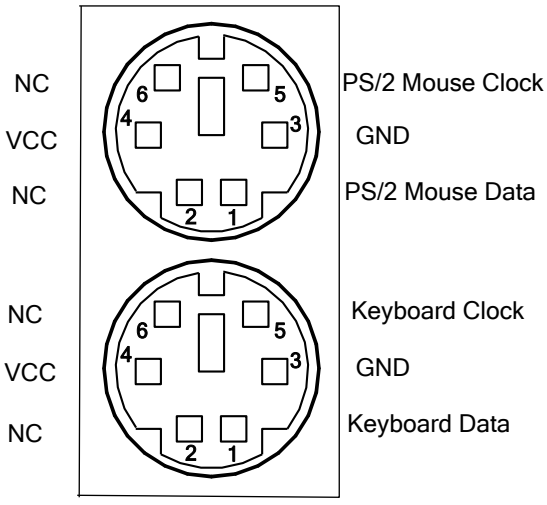
3.3.2 DC-in Jack Power Connector

Connect it to the power AC/DC Adapter (only for AC mode)

Pin	Signal
1	DC Power
2	GND

3.3.3 PS2 Keyboard/Moues Connector

The system provides a keyboard and Mouse interface that is a DIN connector. The PS/2 Mouser port is green, and the PS/2 Keyboard port of purple.



3.3.4 Serial Port Connector

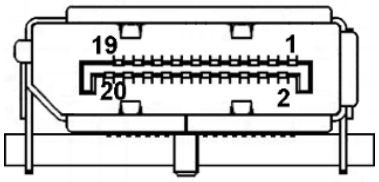
The system has four serial ports. COM1~4 are RS-232 port.

Pin	Description	
1	DCD, Data Carrier Detect	**COM1**
2	RXD, Receive Data	
3	TXD, Transmit Data	
4	DTR, Data Terminal Ready	
5	GND, Ground	
6	DSR, Data Set Ready	
7	RTS, Request To Send	
8	CTS, Clear To Send	
9	RI, Ring Indicator	
Pin	**Description**	**COM2**
1	DCD, Data Carrier Detect	
2	RXD, Receive Data	
3	TXD, Transmit Data	
4	DTR, Data Terminal Ready	
5	GND, Ground	
6	DSR, Data Set Ready	
7	RTS, Request To Send	
8	CTS, Clear To Send	
9	RI, Ring Indicator	
Pin	**Description**	**COM3**
1	DCD, Data Carrier Detect	
2	RXD, Receive Data	
3	TXD, Transmit Data	
4	DTR, Data Terminal Ready	
5	GND, Ground	
6	DSR, Data Set Ready	
7	RTS, Request To Send	
8	CTS, Clear To Send	
9	RI, Ring Indicator	
Pin	**Description**	**COM4**
1	DCD, Data Carrier Detect	
2	RXD, Receive Data	
3	TXD, Transmit Data	
4	DTR, Data Terminal Ready	
5	GND, Ground	
6	DSR, Data Set Ready	
7	RTS, Request To Send	
8	CTS, Clear To Send	
9	RI, Ring Indicator	

3.3.5 DisplayPort Connector

Display Port is a standard designed to replace digital (DVI) and analog component video (VGA) connectors in computer monitors and video cards, as well as replace internal digital LVDS links in computer monitor panels and TV panels.

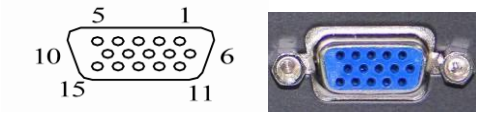
Pin	Signal
1	DPB_LANE0
2	GND
3	DPB_LANE0#
4	DPB_LANE1
5	GND
6	DPB_LANE1#
7	DPB_LANE2
8	GND
9	DPB_LANE2#
10	DPB_LANE3
11	GND
12	DPB_LANE3#
13	Detect Pin
14	GND
15	DPB_AUX
16	GND
17	DPB_AUX#
18	DPB_HPDE
19	GND
20	+3.3V



3.3.6 VGA Connector

The VGA connector is a slim type 15-pin D-Sub connector which is common for the CRT VGA display. The VGA interface configuration can be configured via the software utility.

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	2	Green	3	Blue
4	N.C.	5	GND	6	DETECT
7	GND	8	GND	9	VCC
10	GND	11	N.C.	12	DDC DATA
13	Horizontal Sync	14	Vertical Sync	15	DDC CLK



3.3.7 HDMI Connector

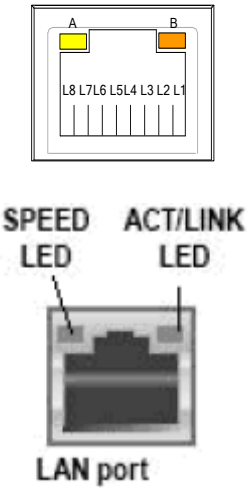
This 19-pin HDMI 1.3 port connects to a HDMI monitor.

Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS Data2+	2	TMDS Data2 Shield	3	TMDS Data2–
4	TMDS Data1+	5	TMDS Data1 Shield	6	TMDS Data1–
7	TMDS Data0+	8	TMDS Data0 Shield	9	TMDS Data0–
10	TMDS Clock+	11	TMDS Clock Shield	12	TMDS Clock–
13	CEC	14	Reserved	15	SCL
16	SDA	17	DDC/CEC Ground	18	+5 V Power
19	Hot Plug Detect				

3.3.8 LAN Connector (LAN1, LAN2)

The RJ-45 connector is for Ethernet. To connect the board to a 1000/100/10 Base-T hub, just plug one end of the cable into connector and connect the other end (phone jack) to a 1000/100/10-Base-T hub

Pin	Signal	Pin	Signal
L1	MDI0+	L5	MDI2-
L2	MDI0-	L6	MDI1-
L3	MDI1+	L7	MDI3+
L4	MDI2+	L8	MDI3-

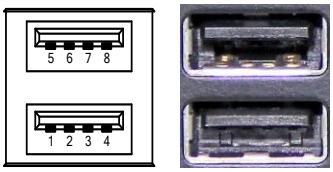


SPEED LED		ACT / LINK LED	
Status	Description	Status	Description
OFF	10Mbps connection	OFF	No link
Orange	100Mbps connection	Green	Link
Green	1Gbps connection	Blinking	Data activity

3.3.9 USB Connector

These ports can be routed to UHCI controller #1 or EHCI controller #1.

Pin	Signal USB Port 0	Pin	Signal USB Port 1
1	USB VCC (+5V level)	5	USB VCC (+5V level)
2	USB #0_D-	6	USB #1_D-
4	Ground (GND)	8	Ground (GND)



3.3.10 Audio Connector

These two audio jacks ideal are for Audio Mic-In and Audio Line-out.

Pin	Signal
1	Line Out (Green)
2	Microphone In (Red)

3.3.11 ATX Power On/OFF Button

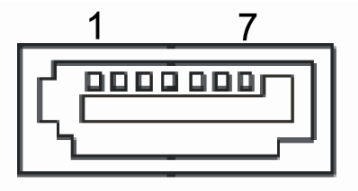
The ATX power button is on the I/O side. It can allow users to control eBOX640-860-FL power on/off.

Pin	Signal
1	GND
2	PSIN

3.3.12 SATA Connector (SATA2/SATA3)

The SATA connector is for high-speed SATA interface ports and they can be connected to hard disk devices.

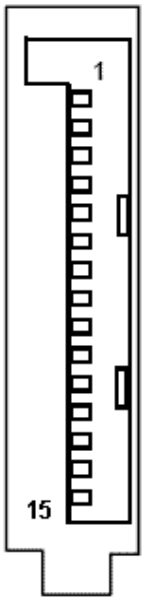
Pin	Signal
1	GND
2	SATA_TX+
3	SATA_TX-
4	GND
5	SATA_RX-
6	SATA_RX+
7	GND



3.3.13 SATA Power Connector

The SATA Power connector is for SATA interface ports and they can provide power to hard disk devices.

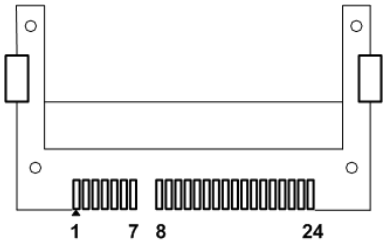
Pin	Signal
1	+3.3VDC
2	+3.3VDC
3	+3.3VDC
4	COM
5	COM
6	COM
7	+5VDC
8	+5VDC
9	+5VDC
10	COM
11	COM
12	COM
13	+12VDC
14	+12VDC
15	+12VDC



3.3.14 CFast™ Socket

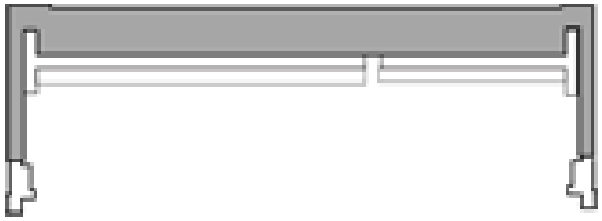
The system is equipped with a CFast™ socket on the bottom side to support a CFast™ card which is based on the Serial ATA bus. The socket is specially designed to avoid incorrect installation of the CFast™ card. When installing or removing the CFast™ card, please make sure the system power is off. The CFast™ card by default identifies itself as C: or D: drive in your PC system.

Pin	Signal	Pin	Signal
1	GND	13	N.C
2	SATA_TX+	14	GND
3	SATA_TX-	15	N.C
4	GND	16	CFAST_LED#
5	SATA_RX-	17	N.C
6	SATA_RX+	18	N.C
7	GND	19	N.C
8	N.C	20	+3.3V Level
9	GND	21	+3.3V Level
10	N.C	22	GND
11	N.C	23	GND
12	N.C	24	N.C



3.3.15 DDR3 SODIMM Socket

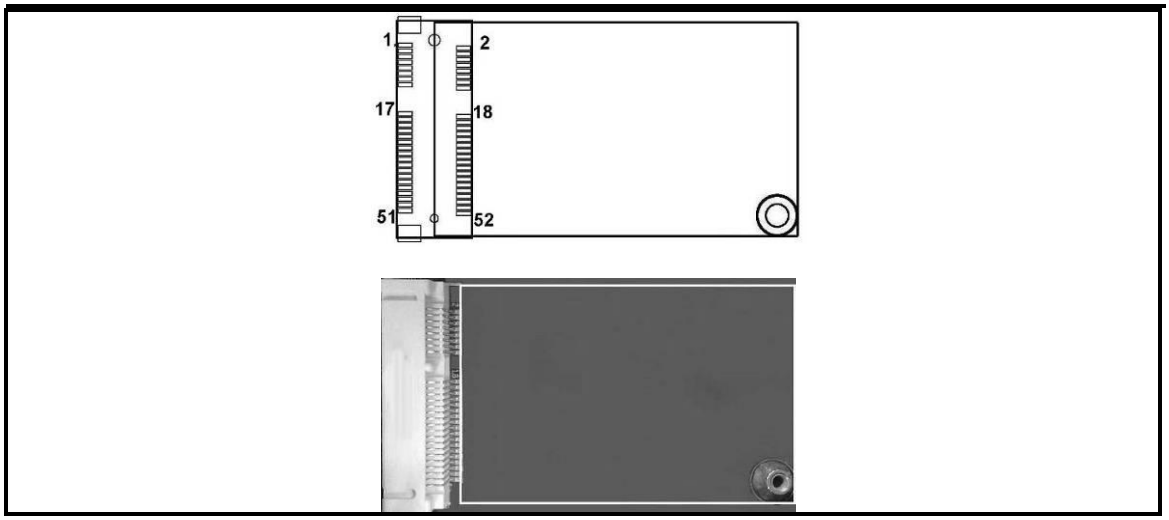
eBOX640-860-FL supports dual standard DDR3 204-pin MHz SO-DIMM sockets.



3.3.16 Express Mini Card Slot

PCI Express Mini Card connector supports a PCI Express x1 link and a USB 2.0 link. A PCI Express Mini Card can be applied to either PCI Express or USB 2.0. The USB 2.0 support will be helpful during the transition to PCI Express, because peripheral vendors will need time to design their chipsets to have the PCI Express function. During the transition, PCI Express Mini Cards can be quickly implemented by using USB 2.0.

Pin	Signal	Pin	Signal
1	WAKE#	2	+3.3VSB
3	No use	4	GND
5	No use	6	+1.5V
7	CLKREQ#	8	No use
9	GND	10	No use
11	REFCLK-	12	No use
13	REFCLK+	14	No use
15	GND	16	No use
17	No use	18	GND
19	No use	20	No use
21	GND	22	PERST#
23	PE_RXN3	24	+3.3VSB
25	PE_RXP3	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PE_TXN3	32	SMB_DATA
33	PE_TXP3	34	GND
35	GND	36	USB_D8-
37	GND	38	USB_D8+
39	+3.3VSB	40	GND
41	+3.3VSB	42	No use
43	GND	44	No use
45	No use	46	No use
47	No use	48	+1.5V
49	No use	50	GND
51	No use	52	+3.3VSB


1
2
17
18
51
52

CHAPTER 4
BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMI BIOS setup utility.

4.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

4.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

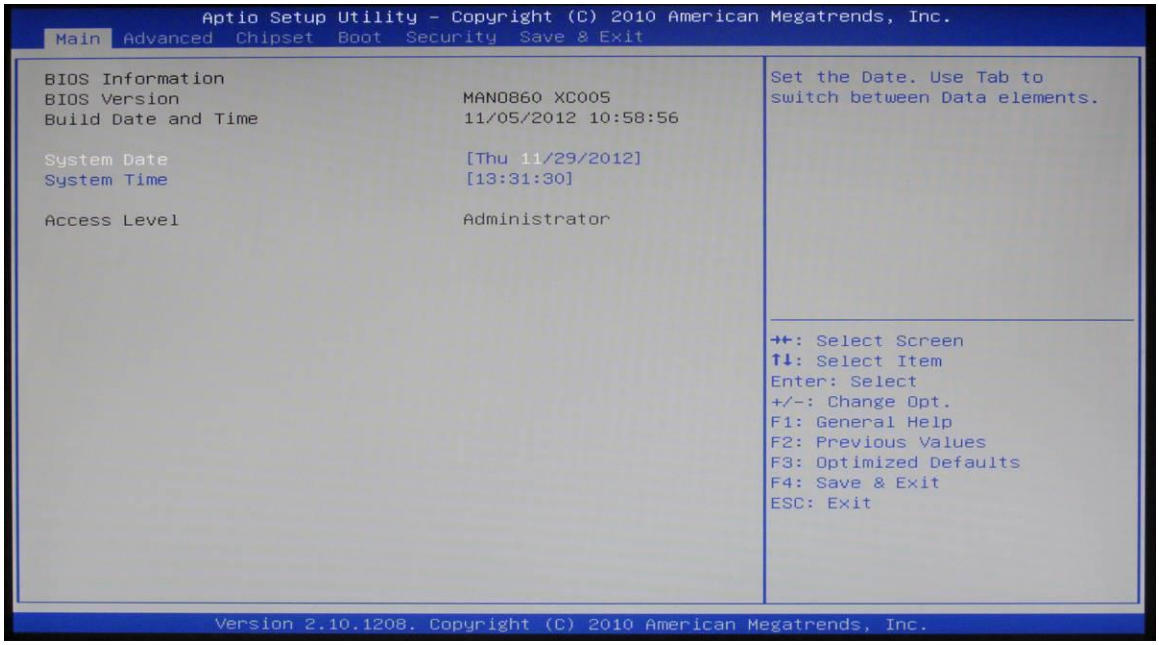
These keys include <F1>, <F10>, <Enter>, <ESC>, <Arrow> keys, and so on.

Note: Some of navigation keys differ from one screen to another.

Key(s)	Function Description
←	Select Screen
↑↓	Select Item
+ -	Change Option / Field/ Value
Enter	Go to Sub Screen
PGDN	Next Page
PGUP	Previous Page
HOME	Go to Top of Screen
END	Go to Bottom of Screen
F1	General Help
F2	Previous Value
F3	Optimized Default
F4	Save & Exit Setup
ESC	Exit

4.3 Main Menu

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



- **BIOS Version**

Displays the auto-detected BIOS Version

- **System Date**

The date format is <Date>,<Month>,<Day>,<Year>.

- **System Time**

The time format is <Hour>,<Minute>,<Second>.

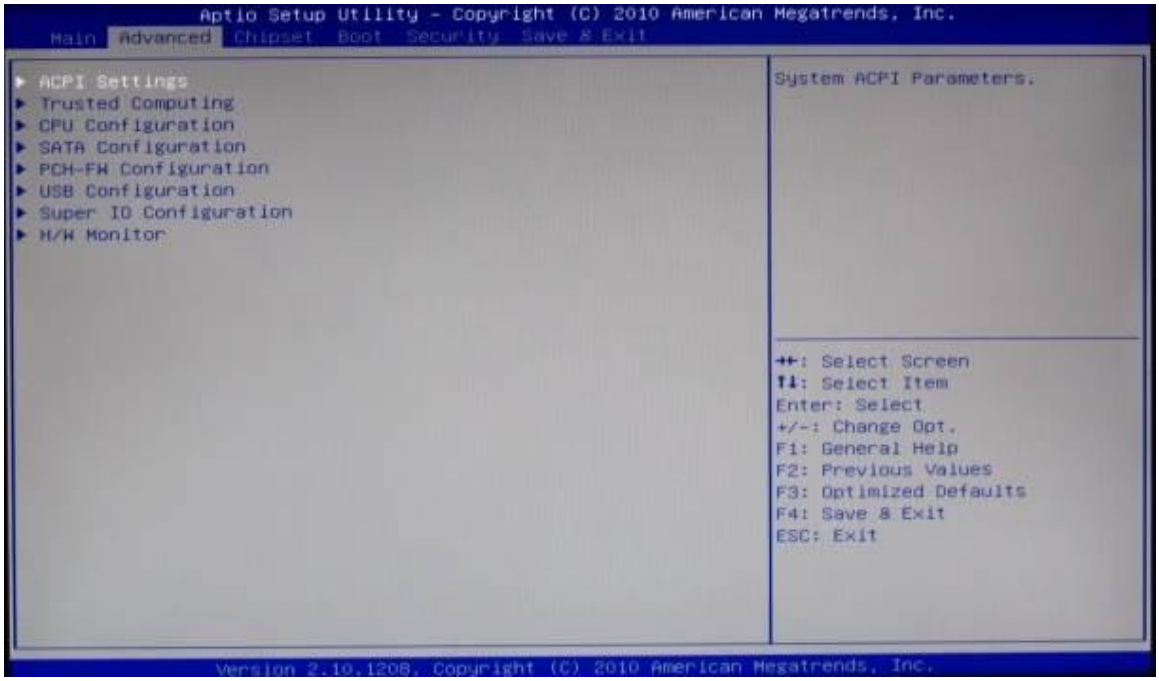
- **Access Level**

Displays the accessory information.

4.4 Advanced BIOS Setup

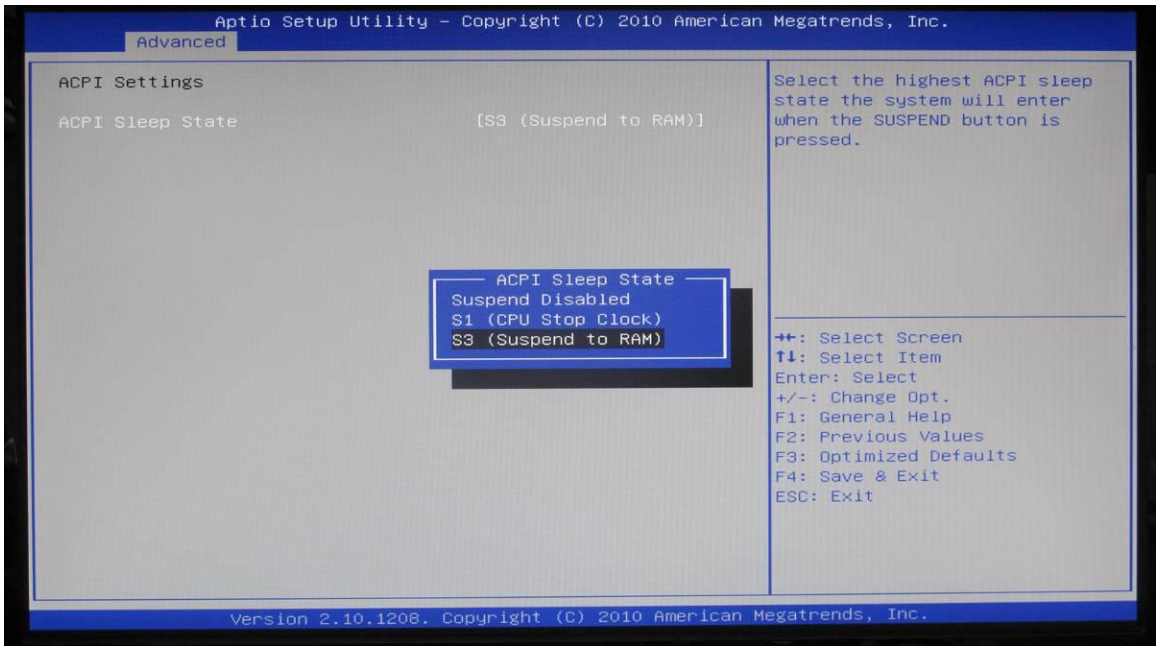
Select the Advanced tab from the setup screen to enter the Advanced BIOS Setup screen.

You can select any of the items in the left frame of the screen, such as Chipset configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screen is shown below. The sub menus are described on the following pages.



	Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

4.4.1 ACPI Settings

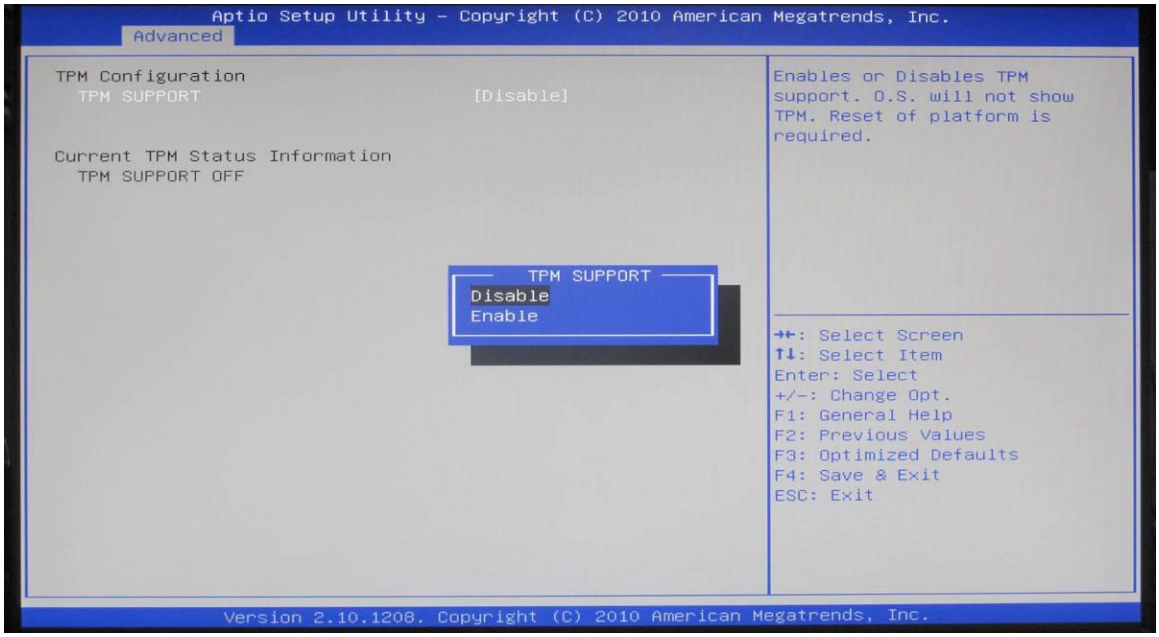


- **ACPI Sleep State [S3 (suspend to RAM)]**

Select the highest ACPI sleep state the system will enter the SUSPEND button is press. Configuration options: [Suspend Disable] [S1 (CPU Stop Clock)] [S3 (suspend to RAM)]

4.4.2 Trusted computing

Trusted computing (TPM) settings.



TPM configuration

- **TPM SUPPORT [Disabled]**

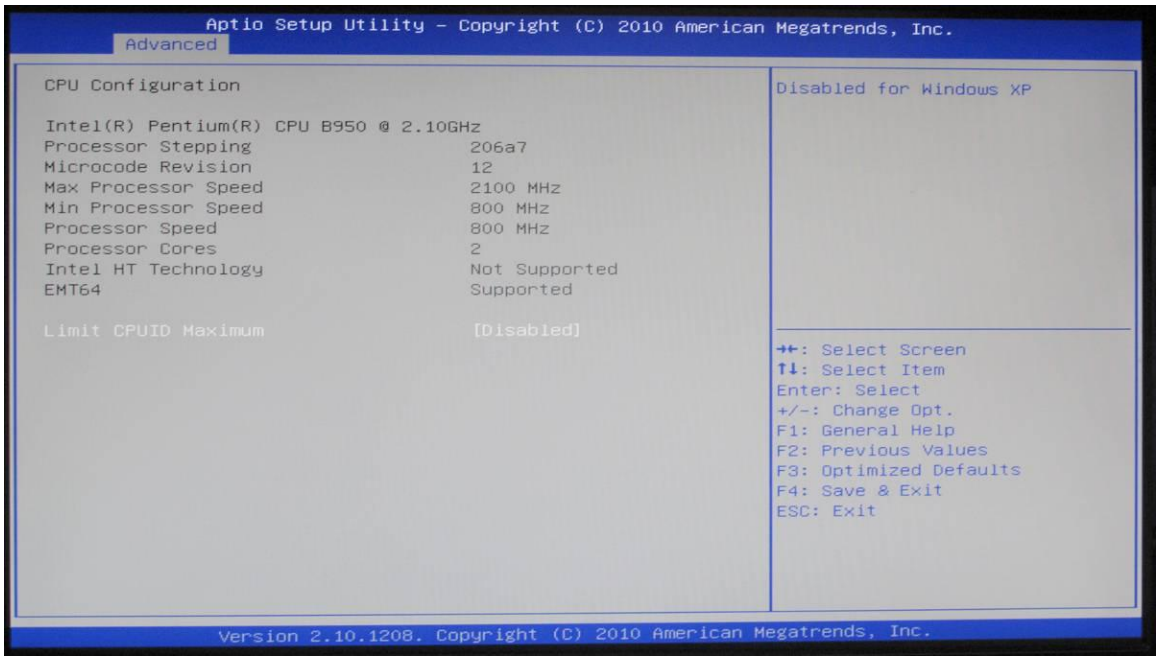
Enable or disable TPM support.

Configuration options: [Disabled] [Enabled]

- **Current TPM Status Information**

Displays the TPM status information

4.4.3 CPU configuration



- **CPU configuration**

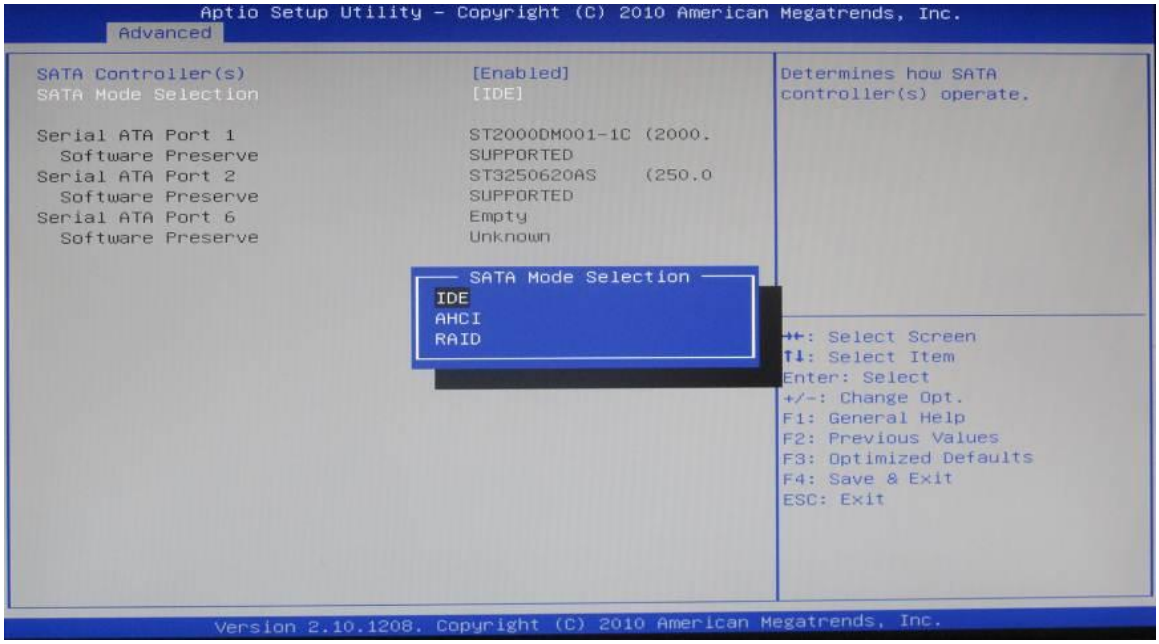
Display the CPU information

- **Limit CPUID Maximum [Disable]**

Disable for Windows XP.

Configuration options: [Disabled] [Enabled]

4.4.4 SATA Configuration



- **SATA Controller(S)[Enable]**

Configuration options: [Enabled] [Disable]

- **SATA Mode Selection [IDE]**

Support IDE, AHCI or RAID mode

Configuration options: [IDE][AHCI][RAID]

- **Serial-ATA Port 1 [Compatible]**

Enabled/Disabled Serial-ATA Controller 1

Configuration options: [Disable] [Enhanced] [Compatible]

- **Serial-ATA Port 2 [Enhanced]**

Enabled/Disabled Serial-ATA Controller 2

Configuration options: [Disable] [Enhanced] [Compatible]

- **Serial-ATA Port 6 [Enhanced]**

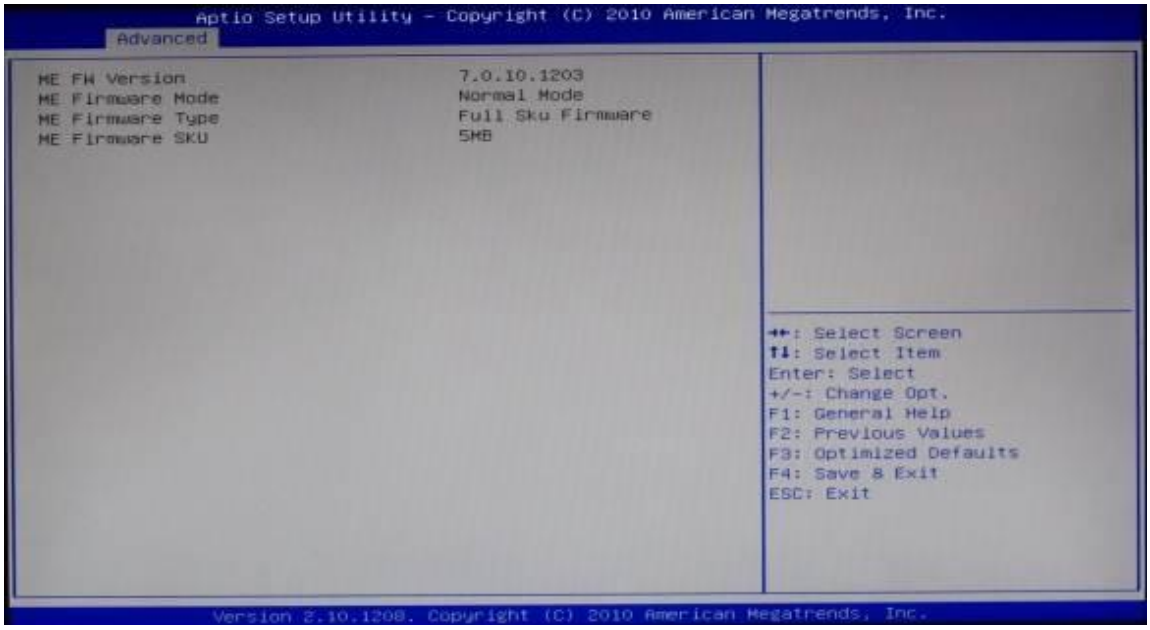
Enabled/Disabled Serial-ATA Controller 6

Configuration options: [Disable] [Enhanced] [Compatible]

4.4.5 PCH-FW Configuration

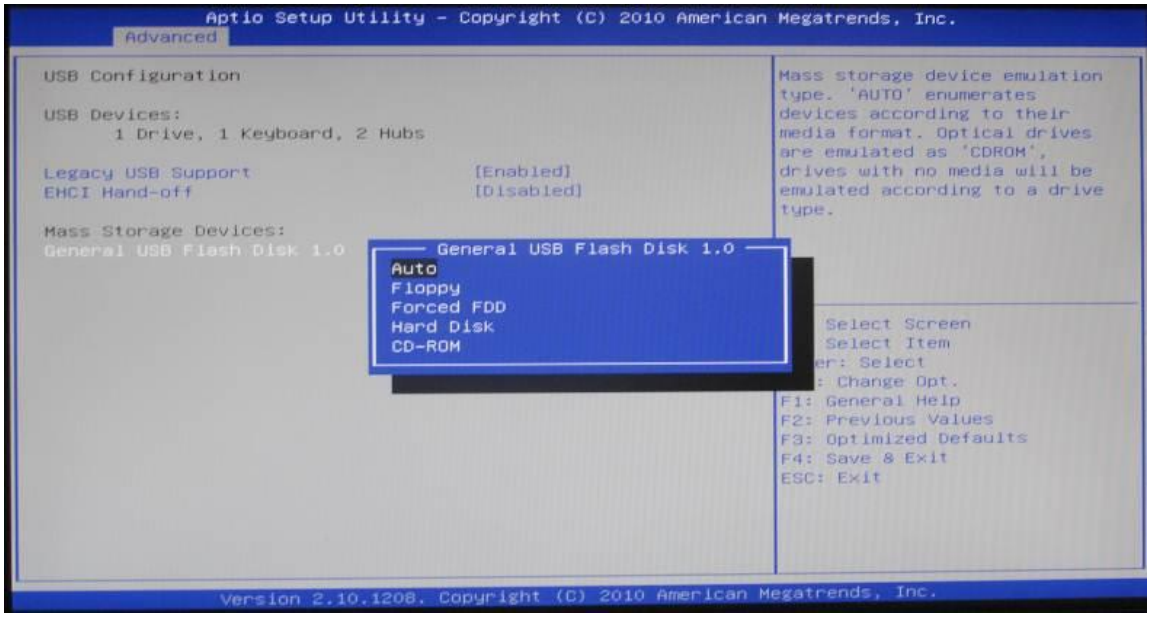
Configuration Management Engine Technology Parameter

- **Display ME Firmware Information**



4.4.6 USB Configuration

USB Configuration Parameters



- **USB Device**

Display how many devices are connected.

- **Legacy USB Support [Enabled]**

Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

Configuration options: [Enabled] [Disabled] [Auto]

- **EHCI Hand-off [Disable]**

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

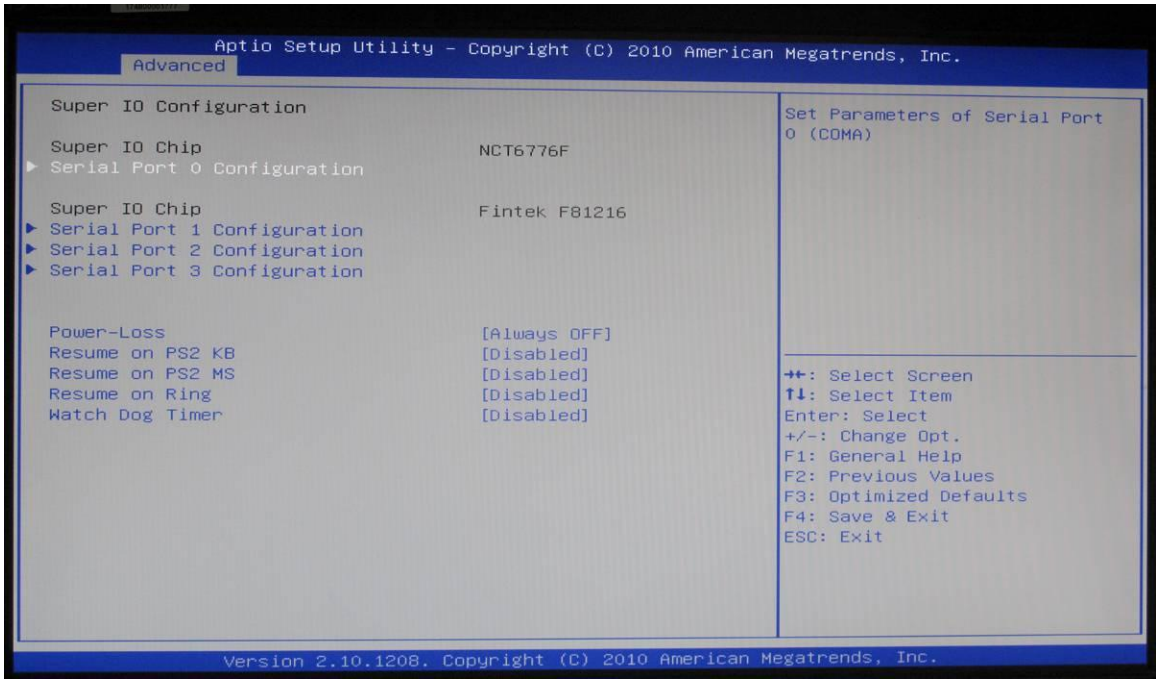
Configuration options: [Disabled] [Enabled]

- **General USB Flash Disk 1.0 [Auto]**

Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CD-ROM]

4.4.7 Super IO Configuration

System Super IO Chip Parameters.

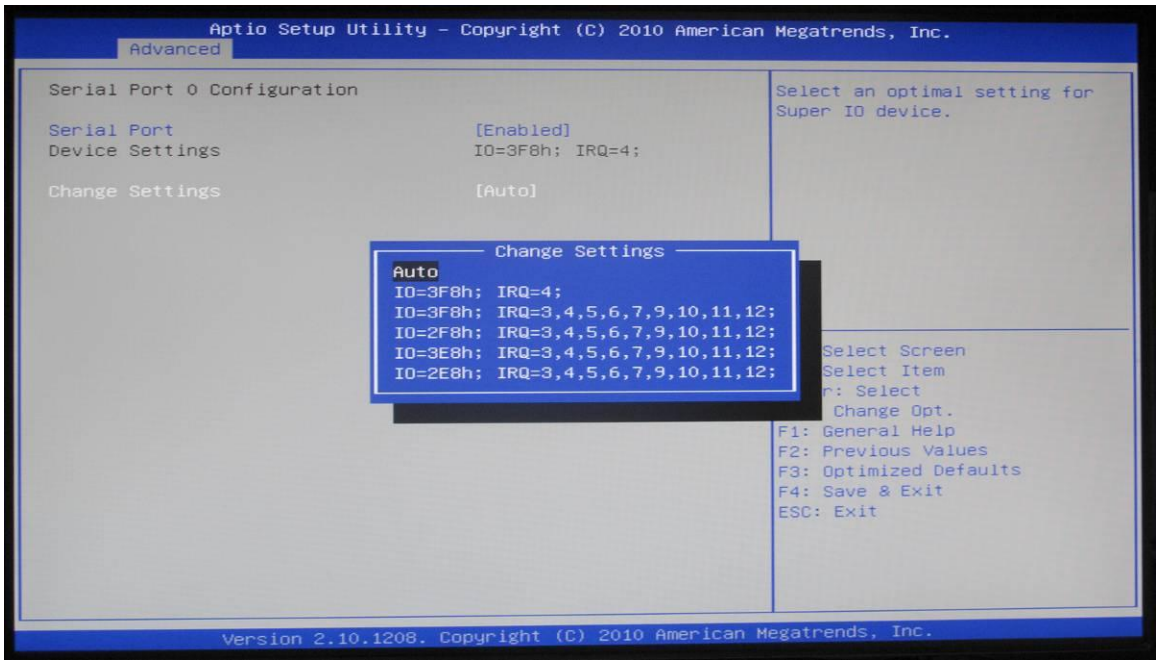


Super IO Configuration

Super IO Chip [NCT6776F]

4.4.7.1 Serial Port 0 configuration

Set Parameters of Serial Port 0 (COM1)



Serial Port 0 Configuration

- **Serial Port [Enable]**

Enable or Disable Serial Port.

Configuration options: [Disabled] [Enabled]

- **Device Setting [IO=3F8h; IRQ=4]**

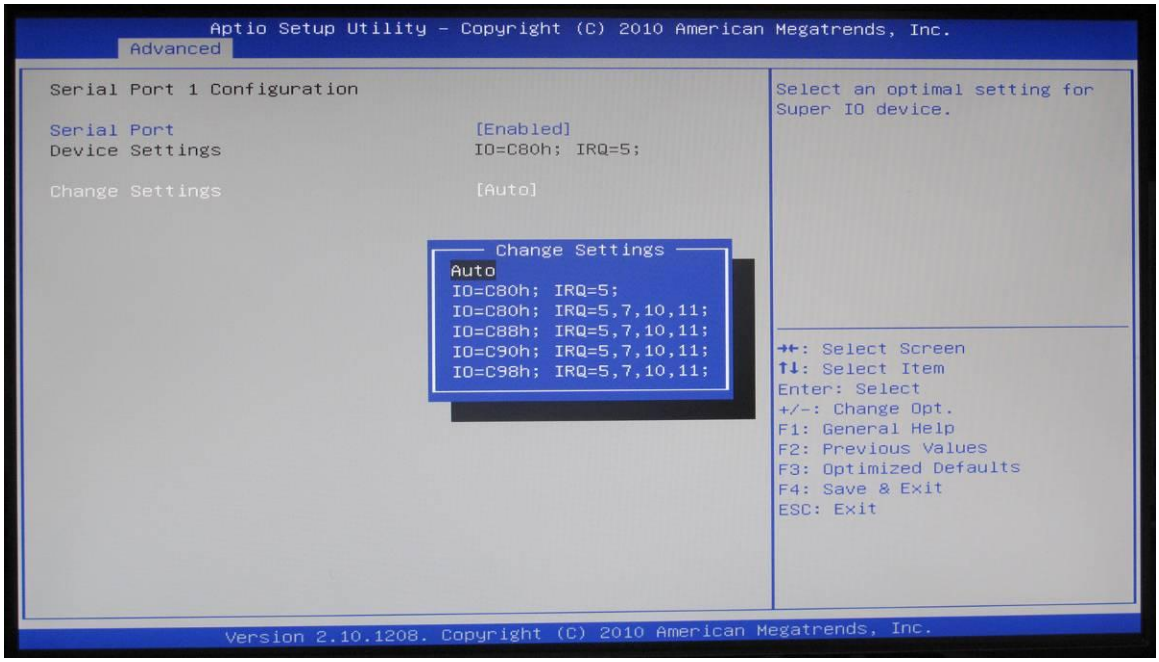
- **Change Setting [Auto]**

Select an optimal setting for Super IO device.

Configuration options: [Auto] [IO=3F8h; IRQ=4] [IO=3F8h; IRQ=3, 4, 5, 6, 7, 9. 10, 11, 12] [IO=2F8h; IRQ=3, 4, 5, 6, 7, 9. 10, 11, 12] [IO=3E8h; IRQ=3, 4, 5, 6, 7, 9. 10, 11, 12] [IO=2E8h; IRQ=3, 4, 5, 6, 7, 9. 10, 11, 12]

4.4.7.2 Serial Port 1 configuration

Set Parameters of Serial Port 1 (COM2)



Serial Port 1 Configuration

- **Serial Port [Enable]**

Enable or Disable Serial Port.

Configuration options: [Disabled] [Enabled]

- **Device Setting [IO=C80h; IRQ=5]**

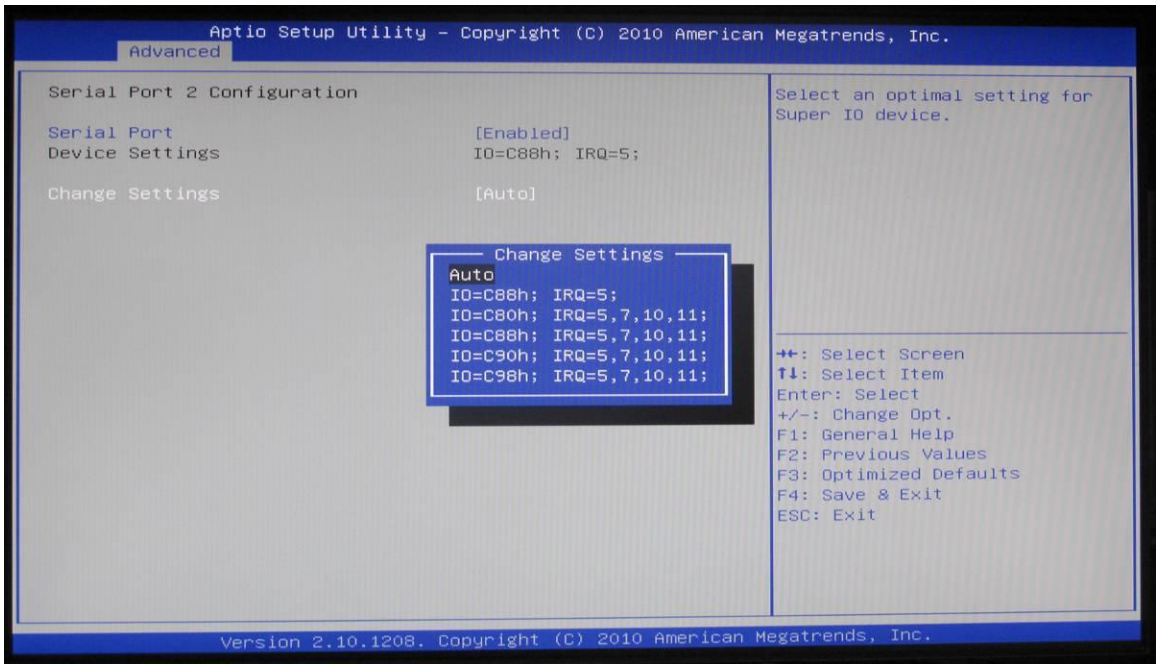
- **Change Setting [Auto]**

Select an optimal setting for Super IO device.

Configuration options: [Auto] [IO=C80h; IRQ=5] [IO=C80h; IRQ=5, 7, 9. 10, 11] [IO=C88h; IRQ=5, 7, 9. 10, 11] [IO=C90h; IRQ=5, 7, 9. 10, 11] [IO=C98h; IRQ=5, 7, 9. 10, 11]

4.4.7.3 Serial Port 2 configuration

Set Parameters of Serial Port 2 (COM3)



Serial Port 2 Configuration

- **Serial Port [Enable]**

Enable or Disable Serial Port.

Configuration options: [Disabled] [Enabled]

- **Device Setting [IO=C88h; IRQ=5]**

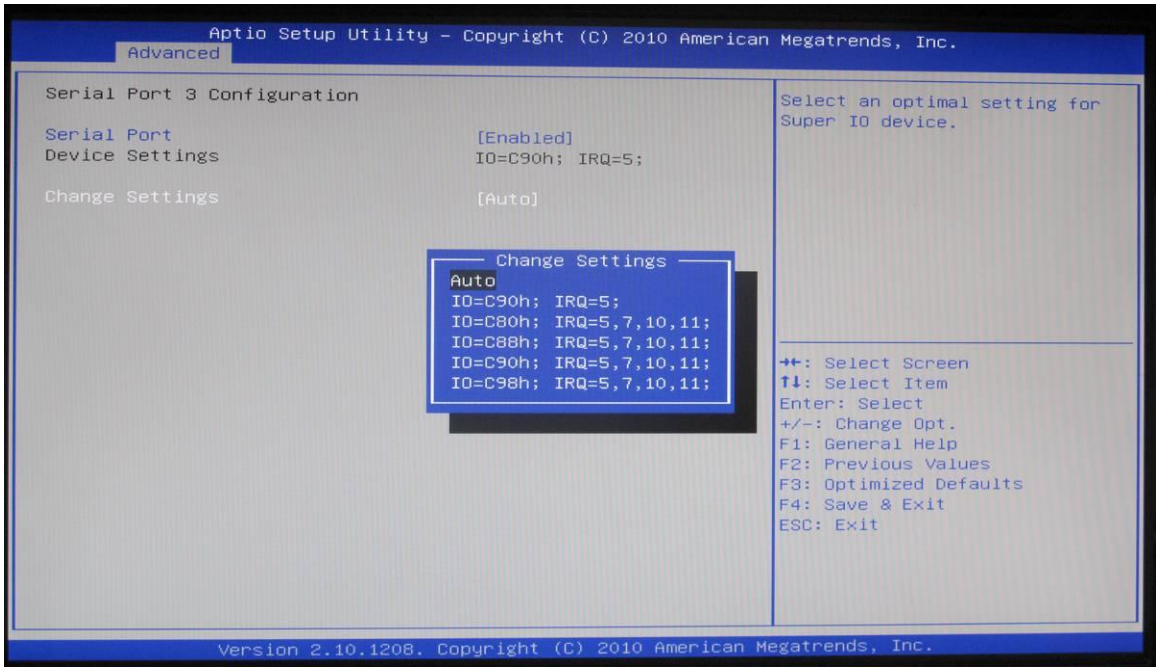
- **Change Setting[Auto]**

Select an optimal setting for Super IO device.

Configuration options: [Auto] [IO=C88h; IRQ=5] [IO=C80h; IRQ=5, 7, 9. 10, 11] [IO=C88h; IRQ=5, 7, 9. 10, 11] [IO=C90h; IRQ=5, 7, 9. 10, 11] [IO=C98h; IRQ=5, 7, 9. 10, 11]

4.4.7.4 Serial Port 3 configuration

Set Parameters of Serial Port 3 (COM4)



Serial Port 3 Configuration

- **Serial Port [Enable]**

Enable or Disable Serial Port.

Configuration options: [Disabled] [Enabled]

- **Device Setting [IO=C90h; IRQ=5]**

- **Change Setting [Auto]**

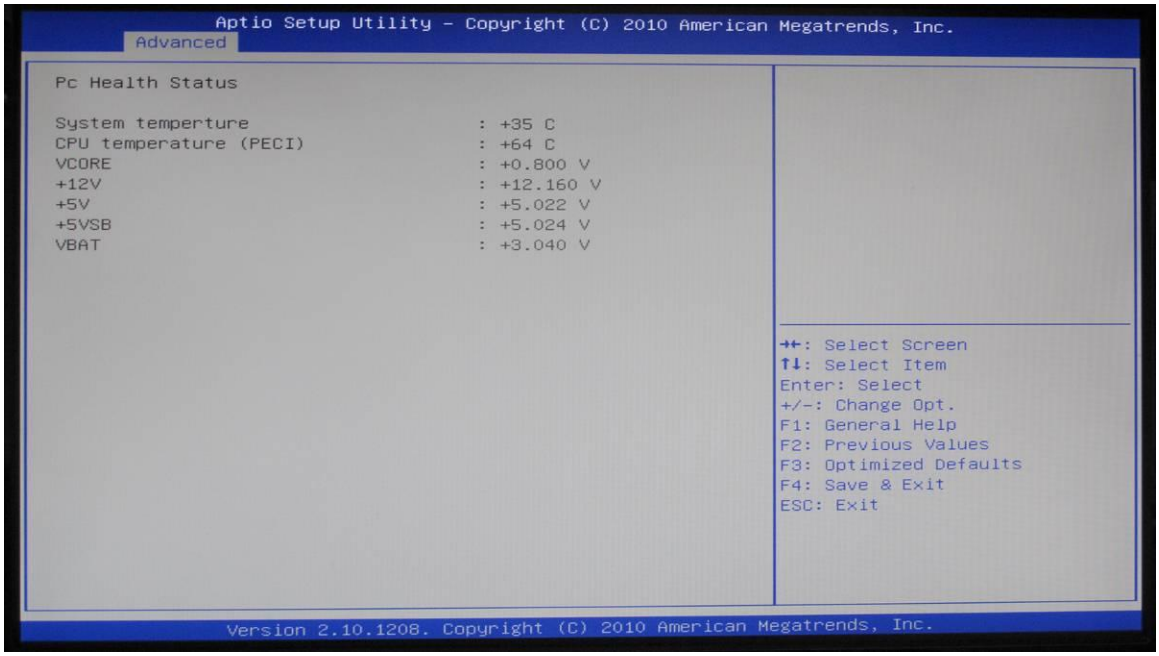
Select an optimal setting for Super IO device.

Configuration options: [Auto] [IO=C90h; IRQ=5] [IO=C80h; IRQ=5, 7, 9. 10, 11] [IO=C88h; IRQ=5, 7, 9. 10, 11] [IO=C90h; IRQ=5, 7, 9. 10, 11] [IO=C98h; IRQ=5, 7, 9. 10, 11]

4.4.8 Hardware Monitor

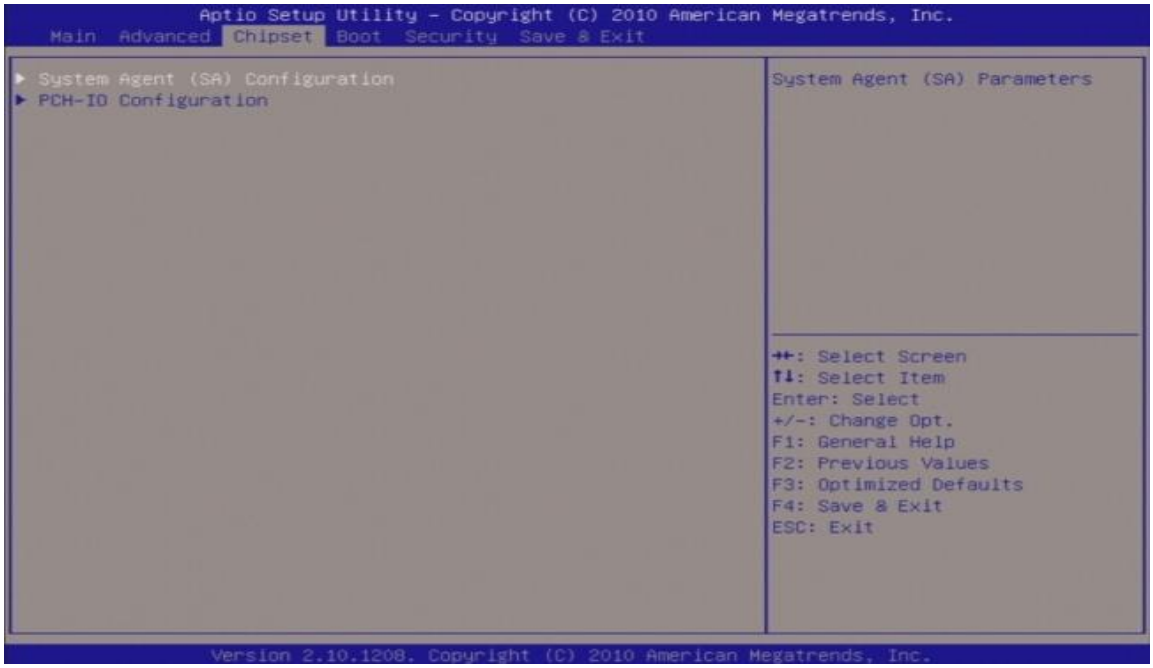
- **PC Health Stutus**

Display system health status

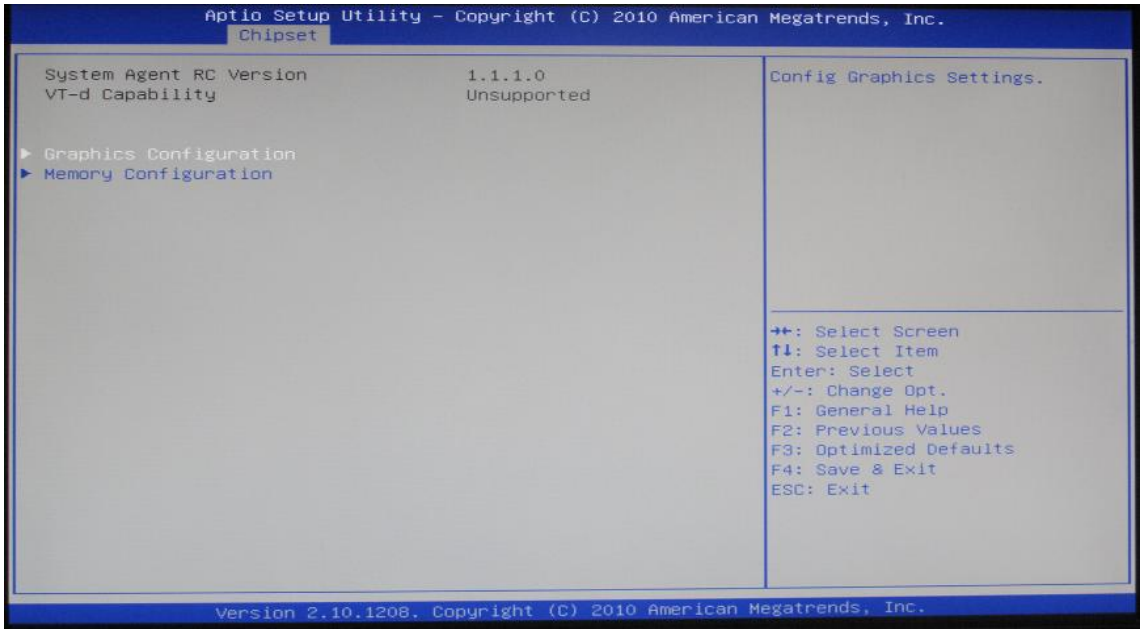


4.5 Chipset

This Chipset tab is ideally for user to modify the chipset settings.



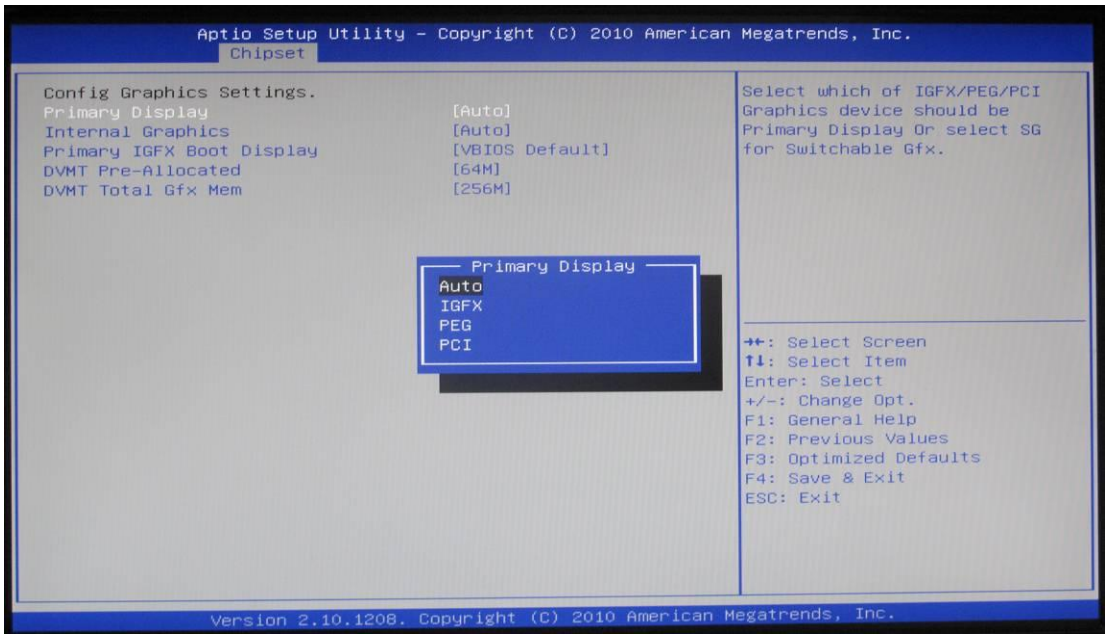
4.5.1 System Agent (SA) Configuration



- **System Agent RC version**

Display System Agent RC information.

4.5.1.1 Config Graphic Settings



- **Primary Display [Auto]**

Select primary display output.

Configuration options: [Auto] [IGFX] [PEG] [PCI]

- **Internal Graphics [Auto]**

Keep IGD enable based on the setup option.

Configuration options: [Disabled] [Enabled]

- **Primary IGFX Boot Display [VBIOS Default]**

Select the output display device when boot up.

Configuration options: [VBIOS Default] [CRT] [HDMI] [Display Port]

- **DVMT Pre-Allocation [64M]**

Internal graphic memory size

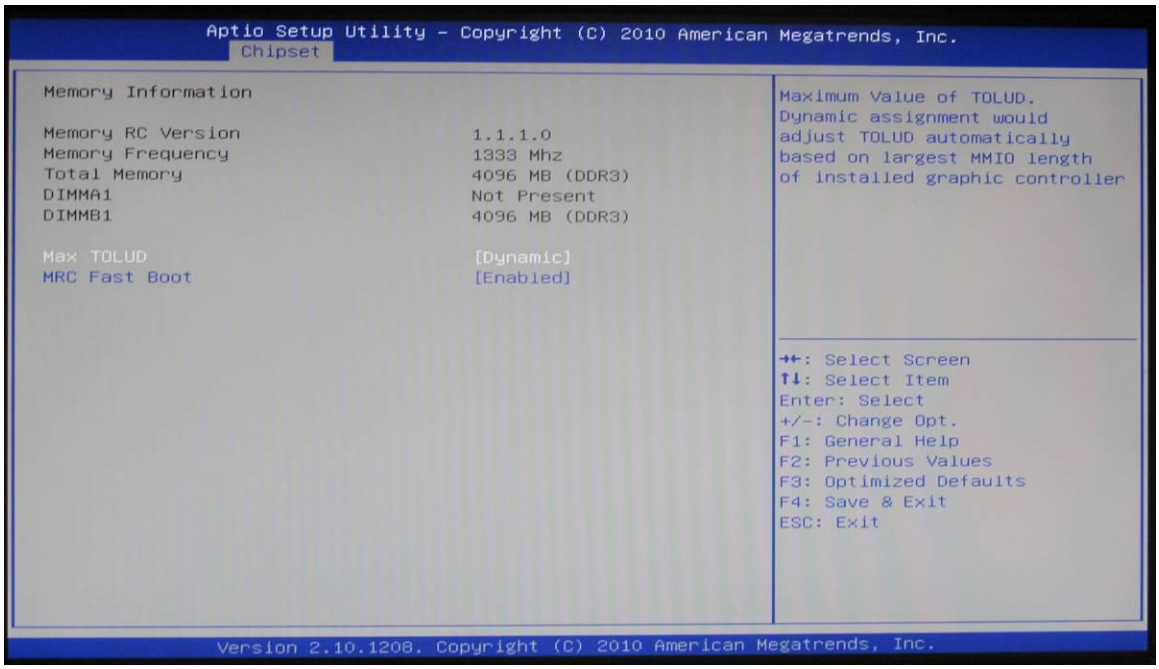
Configuration options: [0] [32M] [64M] [96M] [128M] [160M] [192M] [224M] [256M] [288M] [320M] [352M] [384M] [416M] [448M] [480M] [512M]

- **DVMT Total GFX Mem [256M]**

Select DVMT5.0 total graphic memory size.

Configuration options: [128M] [256M] [MAX]

4.5.1.2 Memory Configuration



- **Max TOLUD [Dynamic]**

Maximum Value of TOLUD

Configuration options: [Dynamic] [1 GB] [1.25 GB] [1.5 GB] [1.75 GB] [2 GB] [2.25 GB] [2.5 GB] [2.75 GB] [3 GB]

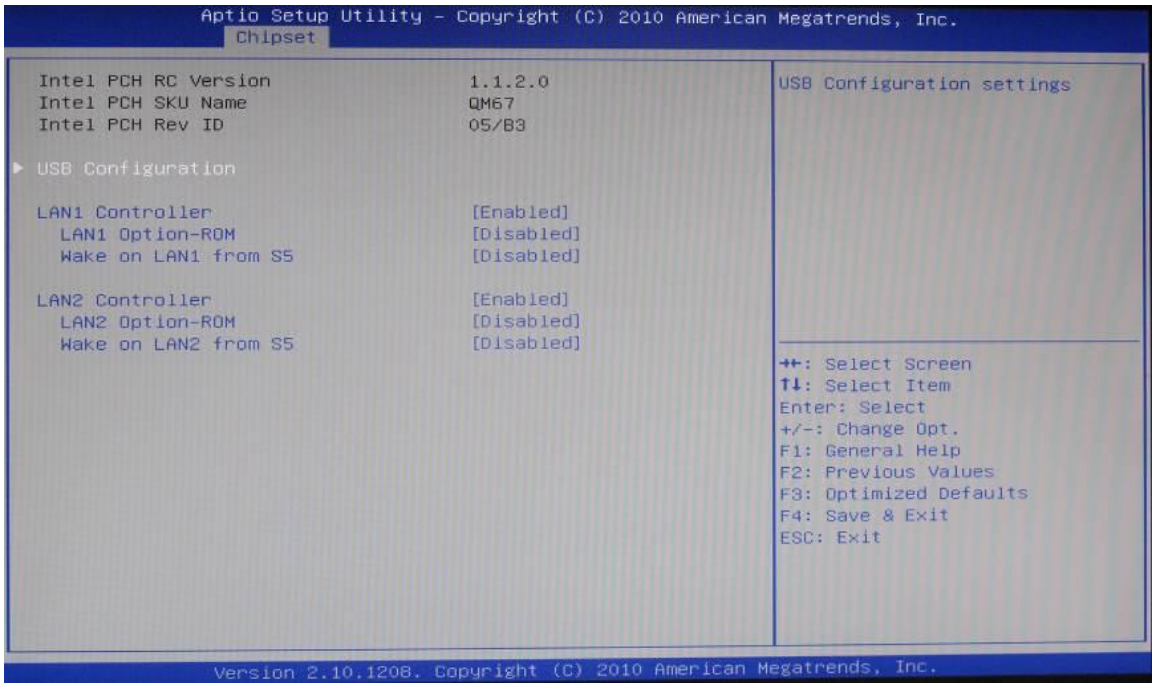
- **MRC Fast Boot [Enable]**

Enable or Disable MRC fast boot.

Configuration options: [Disabled] [Enabled]

4.5.2 PCH-IO Configuration

PCH Parameters



Intel PCH Information

- **LAN1 Controller [Enable]**

Enable/Disable LAN1 Controller

Configuration options: [Disabled] [Enabled]

- **LAN1 Option-ROM [Disable]**

Enable/Disable LAN1 boot option for legacy network devices.

Configuration options: [Disabled] [Enabled]

- **Wake on LAN1 from S5 [Disable]**

Configuration options: [Disabled] [Enabled]

- **LAN2 Controller [Enable]**

Enable/Disable LAN1 Controller

Configuration options: [Disabled] [Enabled]

- **LAN2 Option-ROM [Disable]**

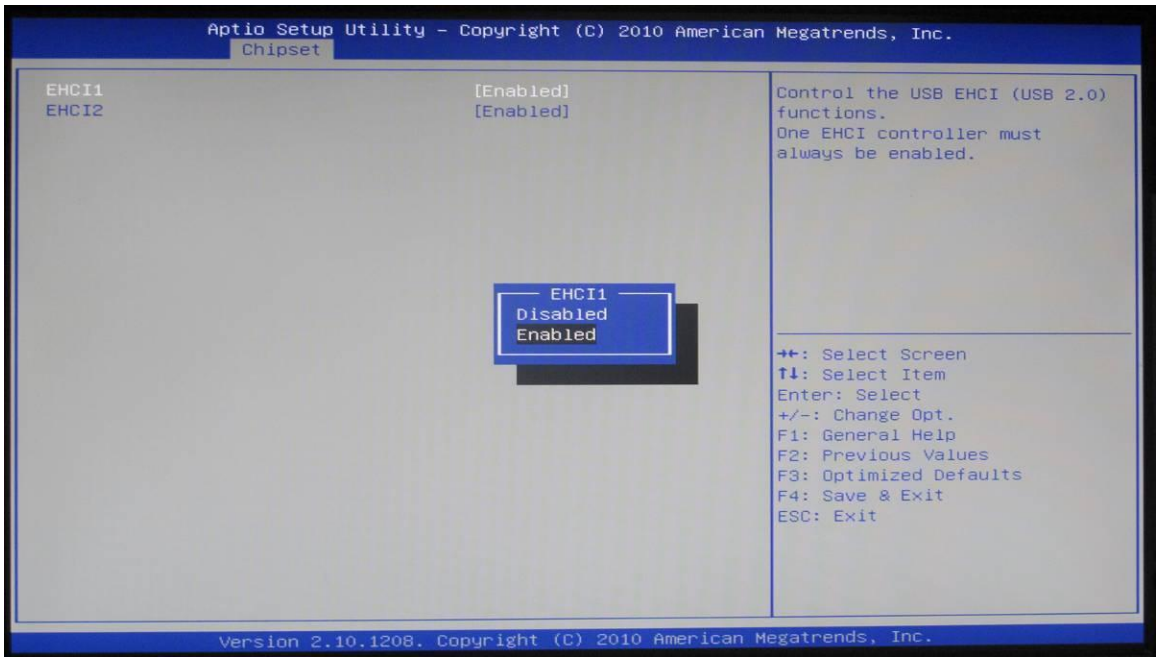
Enable/Disable LAN2 boot option for legacy network devices.

Configuration options: [Disabled] [Enabled]

- **Wake on LAN2 from S5 [Disable]**

Configuration options: [Disabled] [Enabled]

4.5.2.1 USB Configuration



- **EHCI1 [Enabled]**

Enable/Disable USB 2.0(EHCI) support

Configuration options: [Disabled] [Enabled]

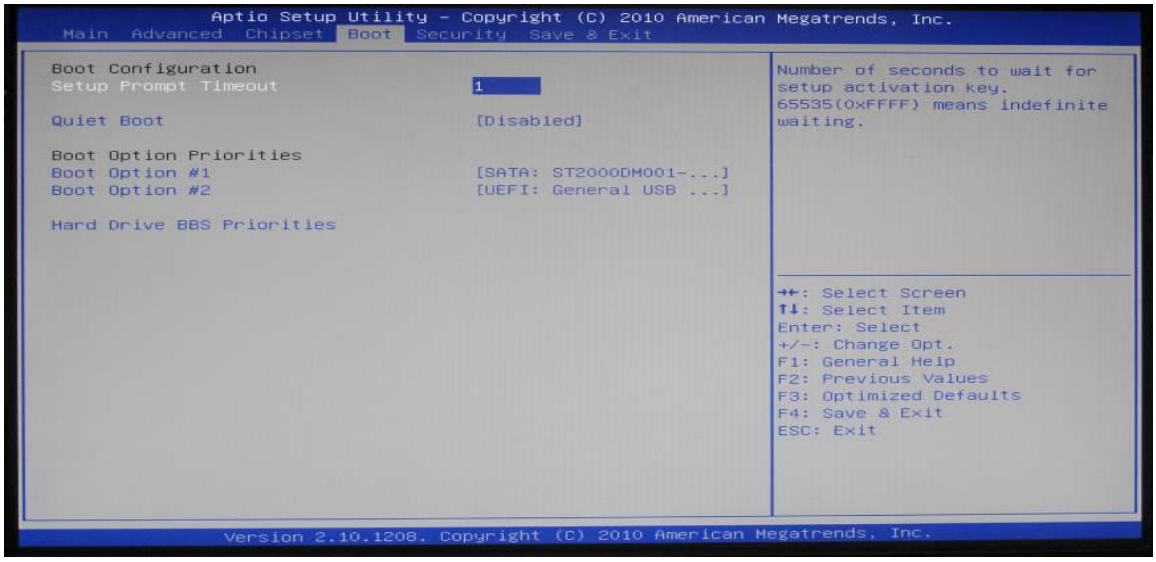
- **EHCI2 [Enabled]**

Enable/Disable USB 2.0(EHCI) support

Configuration options: [Disabled] [Enabled]

4.6 Boot

Boot Configuration



- **Setup Prompt Timeout [1]**

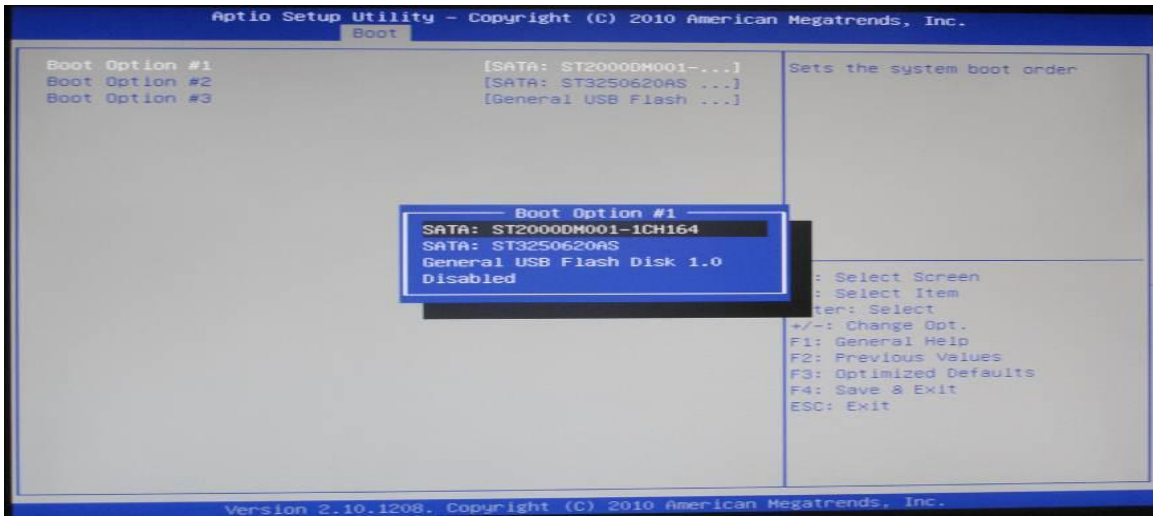
Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

- **Quiet Boot [Disabled]**

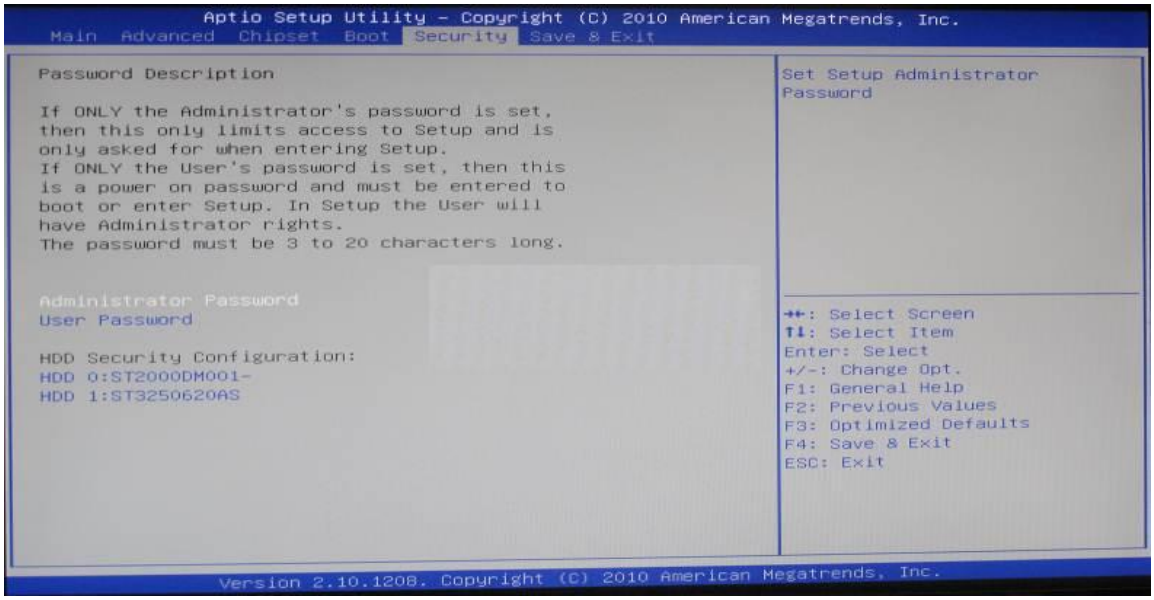
Configuration options: [Disabled] [Enabled]

- **Boot option priorities**

Select the system boot priorities.



4.7 Security



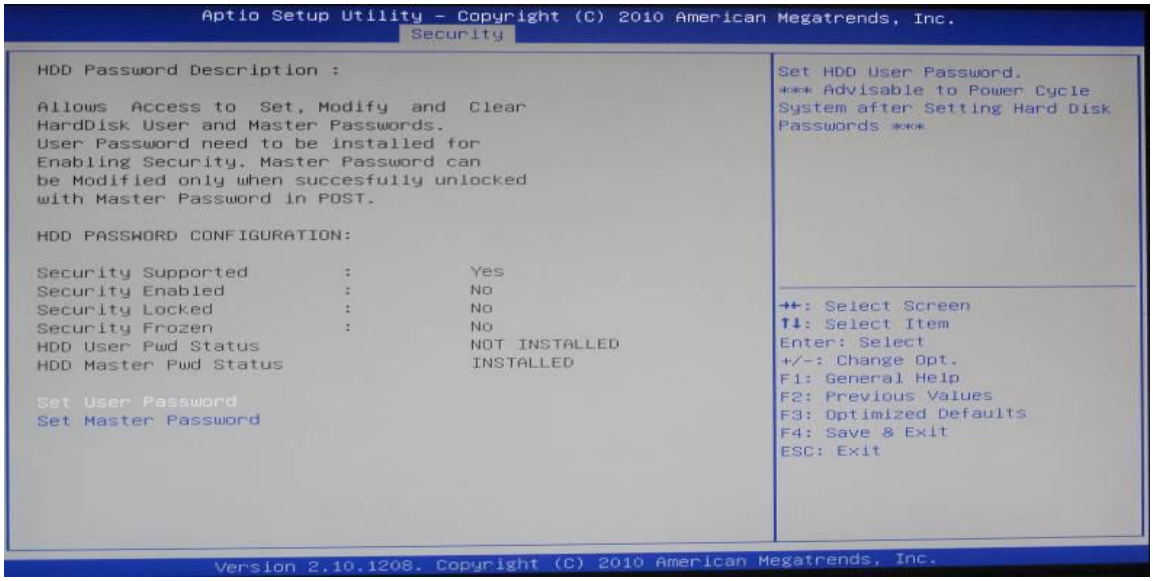
- **Administrator Password**

Set setup Administrator Password

- **User Password**

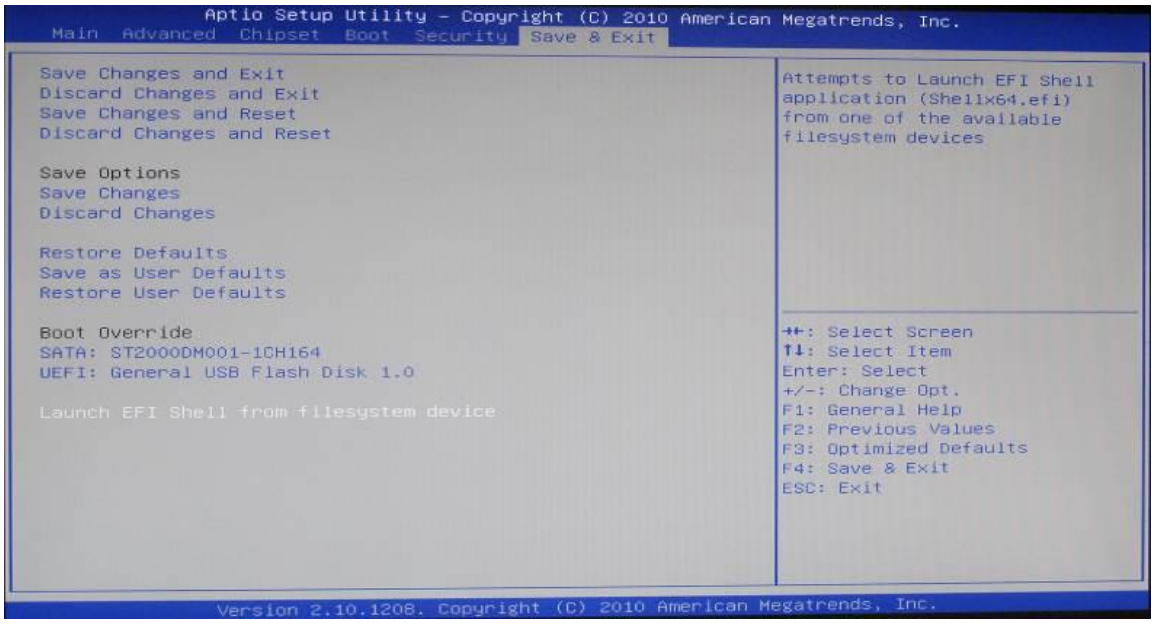
Set User Password

- **HDD Security Configuration**



Set possword tp secure HDD content.

4.8 Save & Exit



- **Save changes and Exit**

Exit system setup after saving the changes.

- **Discard changes and Exit**

Exit system setup without saving the changes.

- **Save changes and Reset**

Reset the system after saving the changes.

- **Discard changes and Reset**

Reset the system without saving the changes.

- **Save Changes**

Save changes done so for to any of the setup option.

- **Discard changes**

Discard changes done so for to any of the setup option.

- **Restore Defaults**

Restore/Load default values for all the setup option.

- **Save as User Defaults**

Save the changes done so far as User Defaults.

- **Restore User Defaults**

Restore the user defaults to all the setup options

- **Boot Override**

Display boot up device.